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PRACTICAL
WINERY & VINEYARD
MARCH/APRIL 2001

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Cover photo: Fetzer Winery, Paso Robles, CA
Photo by Chuck Crotser

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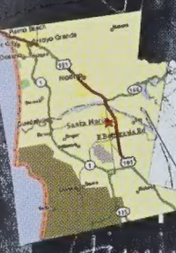
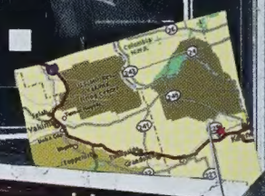
DIARY/IDEAS

SUBJECT Premium Wineries

Five stories. ONE bank.

(Qupe Vineyards)



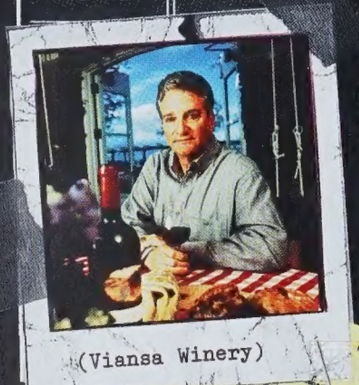


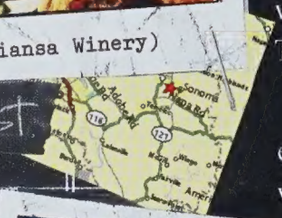
(Hedges Cellars)

CHAPTER ONE. *We All Start Somewhere.*

Santa Barbara County. 1975. Trading weeks of labor for a few precious hours on borrowed equipment, Bob Lindquist dreams of having a winery he can call his own. Starting with just $35,000, he turns (*con't at www.svb.com/qupe*)

Their first vintage is a smash in Sweden. After quickly selling 4,000 cases, the alcohol monopoly Vin & Spritcentralen orders 12,000 more. Hedges Cellars expands into other markets, finding success wherever they go. The only question now is (*con't at www.svb.com/hedges*)

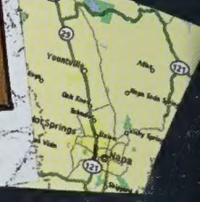

(Viansa Winery)



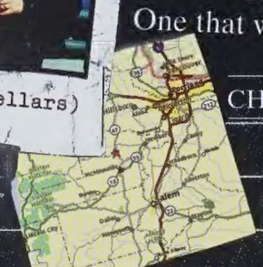
The view is breathtaking. Standing on top of a hill overlooking the lush Sonoma valley, Sam and Vicki Sebastiani raise their glasses for a toast, admiring the land on which they will build their dream. It might not be Tuscany, but (*con't at www.svb.com/viansa*)

Sometimes family legacies are so deeply engrained, they are fulfilled subconsciously, almost without effort. Fate has a funny way of doing that to people. Take Koerner Rombauer. A pilot from (*con't at www.svb.com/rombauer*)

(Rombauer Vineyards)



(Ken Wright Cellars)



Lexington, Kentucky is a long, long way from the Willamette valley. But for Ken Wright, that's where it all begins. Waiting tables at the quaint Fig Tree restaurant, he develops an insatiable curiosity for wine. One that will lead him from the bluegrass (*con't at www.svb.com/wright*)

CHAPTER TWO. *The Journey Continues. (on the web sites above.)*

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Environmental critique of the wine industry

BY Shepherd Bliss, Kokopelli Farm
Sebastopol, CA

"Out beyond our ideas of wrong-doing and right-doing there is a field. I'll meet you there," the 12th century Persian poet Rumi wrote. Rumi wrote a lot about wine — hundreds of ecstatic poems. I want to take a step toward getting to that field — where environmentalists and wine-makers can get beyond "our ideas of right-doing and wrong-doing." But getting there can take what Rumi calls "words that hurt."

I was asked to speak as an environmentalist. Let me acknowledge that within the wine industry there are many environmentalists. So I want to avoid the dualistic, polar thinking of the environmental movement versus the wine industry. We are all in this together and need to try to find solutions to complicated 21st century environmental problems.

Wine and poetry are old, but there is something even older — nature itself. Nature was here before any of us alive today, and hopefully, it will outlast us. Global warming, the growing ozone hole, and the thawing of both polar ice-caps are ominous signs that concern scientists and should concern all of us in terms of nature's health. We have to work together to solve such major environmental problems. The wine industry could be a leader in developing sustainable practices that protect nature.

But part of today's wine industry is on a collision course — with nature and with people. I have some complaints, but not about wine and its people. My criticisms are about agricultural practices. The problem is not the product, which I and so many million others cherish.

The problem is in the process, that is, in the agricultural practices. Specifically in de-forestation, the cutting of trees, and the consequent reduction of our earth's natural habitat, which is the very foundation that animals, plants, and people depend upon for survival.

Planting too close to riparian areas is a problem. Doing so invites sharp-shooters and other vectors, which are symptoms of this problem rather than the problem itself. Such insects are messengers, as animals often are. Monocropping is a problem — by which I mean replacing the natural, diverse environment with an artificial environment of one plant — which tends to invite disease.

If you do not follow the rules of nature, you put yourself at risk. Nature abhors a monocrop and will take her proper course.

The wine industry may go the way of the tobacco industry and corporations such as Firestone, who continue to emphasize high production and benefit while ignoring costs and risks. For the wine industry, these risks include damage to the natural environment and people's health. It took years, but the public prevailed over tobacco and Firestone. For various reasons, the wine industry is becoming increasingly unpopular and seems to be provoking a movement against it.

As a food farmer, let me try to put wine in the larger picture of industrial agriculture. Gordon Conway, an agricultural ecologist, is president of the Rockefeller Foundation. He recently wrote a book sub-titled "Food for All in the 21st Century." Conway is concerned with agricultural practices that he says "have become a significant contributor to the global pollutants that affect the ozone layer and produce global warming."

Conway continues: "There is clear evidence of instances where pesticides, far from solving pest problems, make them worse. As we have long known, pesticides and fertilizers pose serious health hazards." Conway is concerned about the "cumulative effect of environmental degradation" — eroding soils, squandered water supplies, and forests destroyed. He does not lay all this at the feet of the wine industry, nor would I, but he does ask commercial agriculture to wake up. The wine industry could be a leader in improving farming practices.

Let me use an example. In 1994, 226 of the world's leading scientists reported in a "Scientific Assessment of Ozone Depletion" that the pesticide methyl bromide, used in some vineyards, is a "significant ozone-depleting compound." It eats away at the ozone layer which protects us from ultraviolet (UV) rays. The "ozone hole" continues to grow and recently expanded to cover its first populated area — a town of over 100,000 in Chile.

According to the U.S. Environmental Protection Agency, cataracts can be caused by exposure to UV rays. Scientists predict that for every 1% decrease in the ozone layer, 100,000 to 150,000 additional cases of cataract-induced blindness will occur world wide. I have cataracts, so I am no friend of methyl bromide. Cataracts can be caused by working in the fields and being hit by ultraviolet rays, which the depleted ozone no longer protects us from so well.

Various countries, including Canada and the Netherlands, have banned methyl bromide. It should have been phased out here in the U.S. long ago, but agribusiness and the chemical industry used their political power to prevail over public health and postponed the ban. Short-term benefit outweighed long-term health concerns. So we still have methyl bromide, though hopefully not for long. Methyl bromide should go the way of DDT and be banned immediately.

The U.S. is headed for a showdown on methyl bromide during 2001.

California Congressman Richard Pombo wants to push back the U.S. phase-out date to 2015. The U.S. now uses 40% of the world's methyl bromide. *E magazine* (Nov/Dec 2000 p. 37) reported that, since 1982, nearly 500 poisonings linked to methyl bromide have occurred in California, 19 of them fatal. The use of methyl bromide in the U.S., including by the wine industry, does major damage to the globe's fragile ecology.

Wine trade publications abound with glowing reports on globalization these days. Let me speak to the down side. The global economy is financially lucrative for a few, but it also means that more land-use decisions for Sonoma County, for example, are made in board rooms elsewhere around the world by directors and managers. These decision-makers sometimes have never even seen our redwood trees, rugged coast, and rolling hills in Sonoma County. So why should they have any commitment to protect them? My neighbors and I would much rather live in the natural Redwood Empire than in the commercial Wine Country.

The Battle of Seattle against the World Trade Organization and globalization happened about one year ago. It was a shot heard around the world that heightened awareness of the growing concern with the global economy. I expect the international mass movement against globalization and in support of diverse local economies will grow.

In Sonoma County, the pending violation of private property by non-consensual spraying of pesticides to combat the glassy-winged sharpshooter will be a major blow to the wine industry's worsening public image. It is one thing to spray your own lands; it is quite another to spray the homes and private properties of other citizens.

If the government attempts mandatory spraying, we may soon have "The Battle of Sonoma County," which could do the wine industry's public image far more damage around the world than that tiny sharpshooter insect could ever do to vines. The wine industry would lose a lot of goodwill, and its historically good environmental image would be damaged.

Do not expect to spray poison without permission on private property in Sonoma County without a tremendous response. People will defend their health, homes, and land.

Some of our little towns in Sonoma County can be like French villages in their commitment to local customs. In Sebastopol, Cotati, and Sonoma, our city councils have passed resolutions against forced spraying. Villagers, whether in Sonoma County or Europe, tend to like their open space and are willing to fight against chemical and industrial invasion by agribusiness.

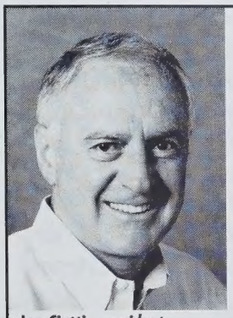
Sebastopol Mayor Larry Robinson and Sonoma Mayor Ken Brown have declared publicly that they personally will resist any

attempts to spray their own homes and yards. Sonoma City Council member Larry Barnett and Sebastopol City Council members Bill Roventini, Craig Litwin, and Sam Spooner have all implored the Sonoma County Board of Supervisors to forego consideration of spraying county lands against people's will.

Some of Sonoma County's independent-minded farmers can be like the Frenchman Jose Bove in his struggle against McDonalds. Bove and his supporters have protested the fast food chain and have gone to jail, advocating more traditional farming practices and participating in the growing international Slow Food movement that started in Italy. Bove is emerging as a global symbol to help galvanize resistance to industrial agriculture.

Forced spraying of pesticides in Sonoma County on private and public properties against people's will is likely to produce a confrontation that could evolve into an international news story like Jose Bove versus McDonalds.

In a "Sonoma County organic farmers and gardeners versus the wine industry" battle, the wine industry would lose, even if it is eventually allowed to forcibly spray pesticides. Local jails would be full of protesting people, and newspapers around the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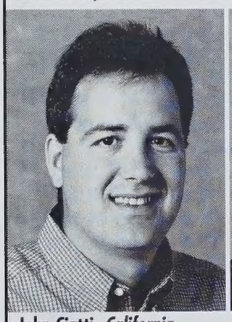
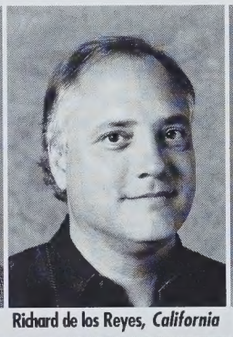

John Ciatti, *California*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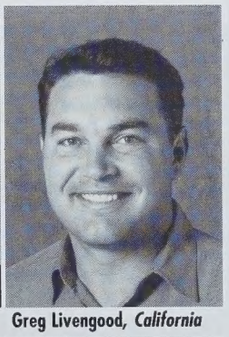
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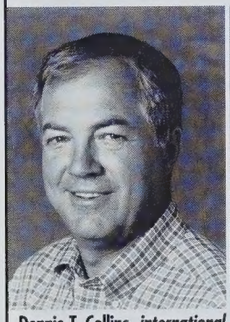
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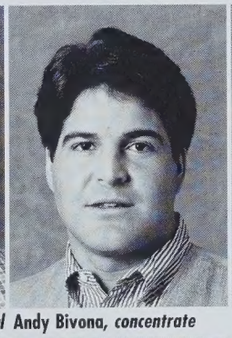
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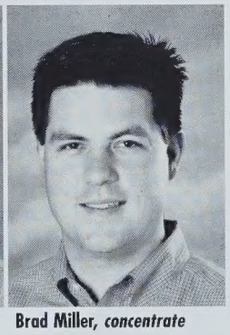
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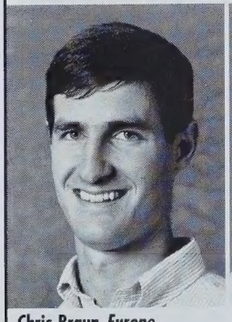
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world would have stories and photos of the confrontation. Sympathy would likely go in favor of citizens protecting their homes and land.

Let me shift now to suggest solutions. A Napa grapegrower once told me, "With great success should come great responsibility."

If wine were to continue to be made in old-fashioned ways, environmentalists would not have problems. They would cheer the wine industry.

If more of the wine industry would agree not to cut trees, as some wineries have, environmentalists would not complain. They would cheer the wine industry.

If more of the wine industry would farm organically, or at least sustainably, and reduce pesticide use — especially of methyl bromide, carbaryl, and organophosphates — environmentalists would not complain. They would cheer the wine industry.

We would not have to worry as much about the dangers of being outside under the sun, eating poisoned fish in the bays, drinking contaminated water, or breathing polluted air.

The wine industry could help create a historic alliance. Environmentalists and the wine industry could come together to protect habitat, keep land in farm production, and thus ensure open space and green belts.

I know that this historic alliance is possible when I talk to some grapegrowers. Together grapegrowers and environmentalists could do far more good than we could do alone. But we would have to all come down from our high horses.

A good example of environmentalists and the wine industry working together was a five-part series of public forums hosted by the Community Alliance with Family Farmers (CAFF), from February to April 2000, in Sonoma County. About 100 people attended each session, including many winegrape growers. Presenters included local wine industry leaders Mike Benzinger, Peter Haywood, Robert Hopkins, Pete Opatz, John Rauck, and Mike Vail. A resulting 10-page report, entitled "Vineyards, Community, and Nature" is available from CAFF at 530/756-8518 or www.caff.org

As Rumi says, "Don't go back to sleep. Wake up." Before it is too late. Let me conclude by repeating the line from Rumi that I began with, changing one word. "Out beyond our ideas of wrong-doing and right-doing, there is a vineyard. I'll meet you there." ■

Dr. Shepherd Bliss is a retired college teacher. He owns the organic Kokopelli Farm in Sonoma County, specializing in berries and free-range chickens. He works with the No Spray Action Network and can be reached at shepherdb@mail.com.

Edited from a presentation to the Legislative and Regulatory Summit for the U.S. Wine Industry, in Napa, CA, on Dec. 8, 2000.

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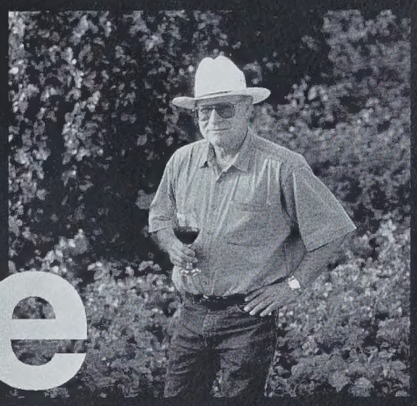

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Tax pitfalls of pre-productive vineyard costs

BY Jim Coleman, JD/CPA
O'Brien, Watters & Davis, LLP
Santa Rosa, CA

You've purchased your first vineyard property (or perhaps entered into a long-term lease). A tremendous amount of work and expense will be required to prepare the vineyard for its first marketable crop — which is at least three years off. Large outlays of cash will be necessary to purchase your "big-ticket" assets such as vines, the trellising system, the irrigation system, and farming equipment such as tractors.

You will also be making significant expenditures to farm the land during the vineyard's pre-productive period. These farming expenditures are referred to as "pre-productive costs." They include items such as training, pruning, tying, weeding, and mowing — all incurred prior to harvest of the first marketable crop. Until harvest of that crop, depreciation on the trellis system, irrigation systems and farm equipment is also regarded as a pre-productive cost.

Additionally, if you financed development of the vineyard, you'll be paying interest on the development loan before your first marketable crop. This interest is also a pre-productive cost.

Other "indirect" expenditures such as repairing and maintaining equipment used in the vineyard, renting equipment used in preparing the vineyard, paying for administrative labor that indirectly benefits the vineyard — to name only a few — are also pre-productive costs.

Obviously, these costs can add up to a substantial sum. Are these pre-productive costs immediately and fully deductible? If so, are there any disadvantages to such deductions? How are the deductions properly reflected on your tax returns?

The information below is to alert growers and their tax advisors — particularly those new to farming practices — of the tax issues involved with pre-productive costs.

Deductibility

In general, the IRS requires a grower to capitalize pre-productive costs. This capitalization requirement is contained in Internal Revenue Code Section 263A. This means the grower cannot deduct pre-productive costs in the year they are incurred. Instead, those costs incurred prior to the harvest of the first commercial crop are added to cost of the vines.

Beginning at the time of harvest of the vineyard's first commercial crop, the grower may then begin to deduct these costs ratably — meaning over a period of 10 or 20 years — by way of depreciation of the vines. The number of years over which the vines must be depreciated (10 years versus 20 years) is discussed below.

However, it is possible to "elect-out" of this capitalization requirement for pre-productive costs. In certain circumstances, the grower can immediately deduct all pre-productive costs.

Why deduct today

Why should you bother to deduct pre-productive costs immediately if you can deduct them over a period of 10 or 20 years through depreciation? The answer lies in the time-value of money. You would certainly prefer to decrease your tax bill by $100 today through an increase in your deductions (in essence keeping that money in your pocket) rather than handing that same $100 over to the IRS today and recouping it over a 10 or 20-year period.

Recently, I was introduced to a longtime vineyard manager who purchased his first vineyard in 1998. He (or, perhaps more accurately, his tax advisor) did not properly deduct the pre-productive costs of the vineyard. Because of this failure to properly document the deduction on his tax return, the IRS rejected the deduction and required the grower to capitalize all pre-productive costs of the vineyard.

Because the grower incurred significant costs in preparing the vineyard, and because there was other income which could have been offset with deduction of pre-productive costs, the grower found himself with a $75,000 tax liability for 1999. The grower's current tax advisor estimates that had the deduction been made properly, the grower would have had *no* tax liability in 1999.

Beginning in fiscal year 2001 (the first year a marketable crop will be produced), this grower will begin to deduct (via depreciation) pre-productive costs. However, it will take several years' depreciation of vineyard assets before he fully deducts all pre-productive costs and recoups the $75,000.

I can assure you the grower would rather have the $75,000 in his pocket today instead of waiting a number of years for the IRS to — in essence — return the money.

Making the deduction

In order to deduct pre-productive costs, a grower must elect out of the capitalization requirements of Code Section 263A. To do this, three requirements must be met.

First, the grower must report profit or loss from farming activities on Schedule F of Form 1040. While the use of Schedule F may be routine to individuals and their tax advisors with experience in the agricultural industry, it may not be for newcomers.

We often see problems when new vineyard owners continue to use their longtime tax advisors. When both parties are new to agriculture, they may overlook unique tax rules specific to farming operations.

New vineyard owners and their tax advisors should begin their education

in the taxation of farming operations by consulting IRS Publication 225 — The Farmers Tax Guide. This guide can be ordered or downloaded from the IRS website at www.irs.gov or ordered directly by telephone from the IRS at 800/829-3676.

The second step in properly deducting pre-productive costs is to do just that – make sure the deductions are listed properly on Schedule F of Form 1040.

Finally, the grower must switch to a new method of depreciation at the same time that pre-productive costs are deducted. Most taxpayers use a form of depreciation called the "Modified Accelerated Cost Recovery System" (MACRS).

The IRS will allow a grower to deduct pre-productive costs only if he switches the method of depreciation from MACRS to the "Alternative Depreciation System" (ADS). If the grower fails to switch to ADS, the IRS will reject the deduction of pre-productive costs.

Failure to properly use ADS appears to be the most common reason for rejection. Make sure your tax advisor is aware of the importance of using the proper depreciation method.

Downside of the deduction

Deduction of pre-productive costs comes with a penalty. As mentioned above, a grower must use ADS in order to deduct pre-productive costs. Even after all pre-productive costs have been deducted, a grower must continue to use ADS. Unfortunately, ADS is an unfavorable method of depreciating assets. Using ADS, the grower will depreciate farming assets at a slower — thus more costly — rate. For instance, using ADS, vines are depreciated over a 20-year period (as opposed to 10 years using MACRS).

Prior to deducting pre-productive costs, the grower and tax advisor should analyze potential cost savings of the deduction, considering anticipated pre-productive costs and use of ADS. However, it appears that in most cases, deducting pre-productive costs will save in both the short- and long-term.

According to Karen Kryla, tax partner at wine industry specialist Motto Kryla & Fisher, LLP, "In most of the cases that we have analyzed, making the election to deduct pre-productive costs has proven advantageous to the taxpayer, despite the less favorable method of depreciation. This is especially true where there is interest expense involved.

"However, growers must be sure that they can currently use the deductions that they can create by making the election. Deductions without income to offset or deductions that will be limited by the passive loss rules may provide no current benefit."

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Can all growers deduct pre-productive costs?

In general, in order to deduct pre-productive costs, a grower must deduct costs in the first year the deduction is available to him (*i.e.* the year in which work first begins on the vineyard). The IRS recently issued regulations that appear to let a grower correct a failure to deduct pre-productive costs in the first year the deduction was available.

However, it appears the correction is prospective only. The grower cannot go back and deduct pre-productive costs from a prior year. Additionally, certain documents must be filed with the IRS to make the correction. Preparation of these documents is likely to be time-consuming and expensive.

Finally, entities other than individuals (*i.e.* corporations, partnerships and limited liability companies) can deduct pre-productive costs if they qualify. Generally, large C corporations and "farming syndicates" do not qualify.

Farming syndicates, in a nutshell, are entities in which more than 35% of the losses incurred by the entity are allocated to individuals who do not actively participate in management of the farming business.

The casualty loss or damage exception

A special provision applies when vines are replanted due to destruction caused by disease (including Pierce's disease), pests (including phylloxera), or other casualty. Any grower (other than an excluded grower such as a C corporation or a farming syndicate) may deduct the pre-productive costs incurred when replacing those vines. It does not matter that a grower previously failed to deduct pre-productive costs.

Additionally, if the grower was not previously required to use ADS, he will not be required to use it in the future if pre-productive costs are deducted in conjunction with a casualty loss. It should also be noted that the grower does not have to replant the same parcel of land or the same varietal as long as the new planting is of comparable acreage.

Working with your tax advisor

New vineyard owners should not forget to discuss pre-productive costs with their tax advisor. Ensure that the tax advisor is aware of the benefits of deducting pre-productive costs and all proper steps necessary to make the deduction. The tax advisor should also be prepared to carefully analyze the advisability of a deduction based on anticipated pre-productive costs and the effect of ADS. Choose wisely. ■

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Integrity Award honors champion of Washington viticulture

Dr. Walter J. Clore, the man many call the "Father of the Washington Wine Industry," has received the 3rd Annual Wine Industry Integrity Award from the Lodi-Woodbridge Winegrape Commission. The award, created in 1998, recognizes individuals whose careers exemplify integrity and serve as an inspiration to the wine industry.

On presenting the award in November, Gerald Boyd, chairman of the Integrity Award selection committee, explained: "Dr. Clore's selfless efforts over three decades are almost single-handedly responsible for the development of an entire industry. He had a vision and pursued it with vigor and integrity throughout his career."

Dr. Clore left his native Oklahoma in 1937, at the height of the Depression and the Dust Bowl era. He went to work at Washington State University (WSU) in Pullman, WA, as a horticulturist and earned his PhD three years later. He was assigned to work with tree fruit growers in the Yakima Valley, but soon turned his attention to grapes. Most of his early energies focused on the development of the Concord grape industry, but he also researched *Vitis vinifera*, the European winegrape species.

In the 1960s, Dr. Clore proved that vinifera vines would thrive in the Northwest. He recalls, "There were less than 300 acres of vinifera in Washington in 1969. Now there are 24,000 acres." His efforts in the intervening decades focused on perfecting grapegrowing techniques in the Washington state environment. He investigated varietal adaptability for sites, wine quality, cold hardiness, balance pruning, trellising and training, vine nutrition, irrigation, cover crops, and growth regulators.

"The Washington wine industry was delighted to see national recognition accorded to the champion of Washington viticulture," says winemaker David Lake of Columbia Winery (Woodinville, WA) about the award. "Walt Clore is a straightforward, generous, modest man whose enthusiasm has inspired generations of growers and a state winegrape industry that, in 35 years, has grown from nothing to the second largest in the nation."

Dr. Clore conducted viticultural research for 39 years at WSU, retiring in 1976. He has subsequently served as a consultant to Chateau Ste. Michelle and to the Premium Winegrowers Association, among others, and his work has taken him around the world. Today, reports Sara Spayd, Food Scientist for WSU, "At 89, Walt is still a very forward thinking, active viticulturalist."

In the course of his research, Dr. Clore imported plant material from many sources and tested it in the vineyards at Washington State's Prosser Research Station and at test plots he established with cooperators throughout eastern Washington. He identified the varieties of grapes best suited to the eastern Washington climate and investigated which sites have the best microclimate for premium production. Many of Washington's most successful growers today credit Dr. Clore for his advice on what and where to grow.

Another facet of Dr. Clore's valuable work was the documentation and study of 60 Washington winters and their effects on wine grapes. His research led to changes in viticultural practices specific to the area, including late season watering to preclude midwinter dehydration of the wood and to reduce the depth of soil freezing.

He was the first to recommend deep ripping of the soil to allow roots in winter to reach water below the frozen soil. He also recommended deep planting (16 inches) to encourage vine roots to grow below the winter freezing zone.

Before Dr. Clore began his studies, grapegrowers commonly buried vine trunks each fall. He believed that, through judicious application of water and nutrients, trunks could be forced into a dormancy that would allow them to remain above ground all winter.

By 1964, Clore's viticultural research had the attention of WSU and the small grape wine industry that developed after Prohibition in Washington. He received their support to begin more formal investigations into whether a premium wine industry would be feasible in Washington. Clore and his colleagues Charles Nagel, George Carter, and Vere Brummond tested dozens of varietals and the resulting wines over the next 12 years.

In 1976, Clore, Nagle, and Carter published *Bulletin 823: Ten Years of Grape Variety Responses and Wine Making Trials in Central Washington.* This document provided the basis for a slow but steady capital infusion into Washington that resulted in expansion to 24,000 acres of wine grapes and more than 150 wineries.

This 32-page document provided a record of more than 80 viable varietals, their potential yield and wine quality, and a detailed 50-year weather synopsis pointing out the problems and successes they encountered in their grapegrowing efforts. The book provided the hard proof that European wine grapes could make good wine on a commercial basis in eastern Washington. Bulletin 823 continues as a vital reference for today's industry.

Since his retirement from WSU, Dr. Clore has remained a constant, keen observer of grapes. In the past 20 years, he has been involved in dealing with outbreaks of verticillium and 2-4D damage and in the investigation of phylloxera in eastern Washington. He also teamed with Ronald Irvine to write *The Wine Project: Washington's Winemaking History*, researching both pre- and post-Prohibition winegrape activities in the state through 1994.

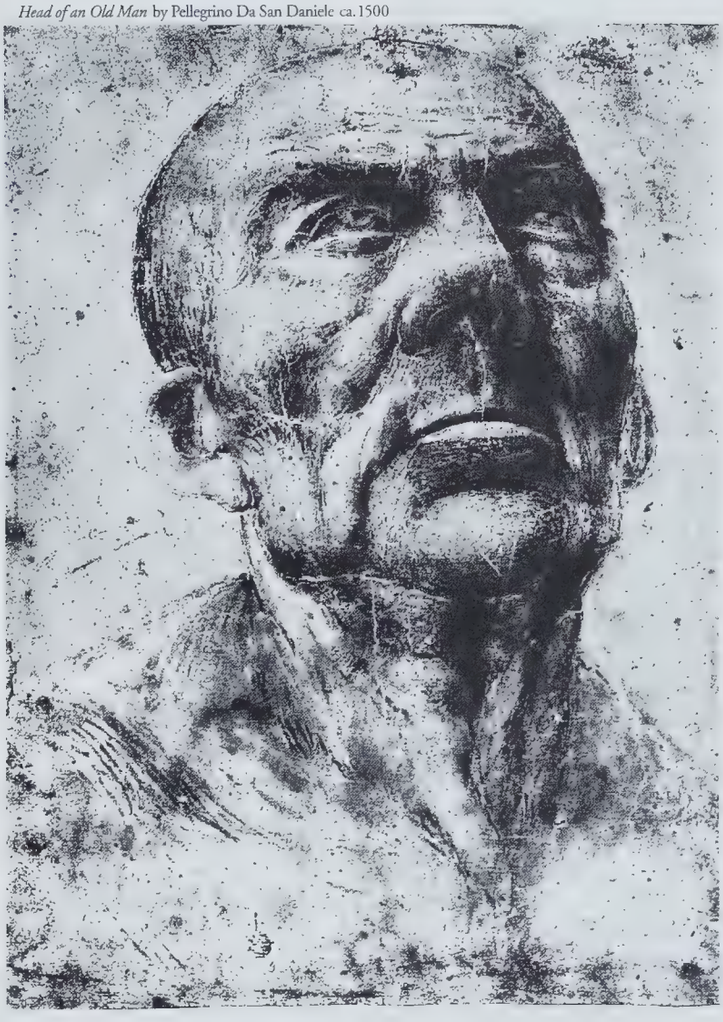
The Integrity Award is only the most recent among many honors Dr. Clore has received. He was recognized by the American Society of Enology & Viticulture with its prestigious Award of Merit. He was named Washington State Grape Society's Man of the Year; Supreme Knight: by Knights of the Vine; and the Prosser Outstanding Citizen of the Year. In 1998, the Washington Wine Commission gave him its Lifetime Achievement Award.

Another measure of Dr. Clore's importance to the Washington wine industry are the honors that bear his name: Washington State Grape Society's "Person of the Year" award; the Tri-Cities Wine Festival wine award (Pasco, WA); and the Washington Association of Wine Grape Growers scholarship.

"It's an honor to title Dr.Walt Clore the "Father of the Washington Wine Industry," says Roger Gamache, of the Washington Winegrape Growers, "and one can truly appreciate the recognition given from other grapegrowing regions in the industry. The Integrity Award given to Dr. Clore by the Lodi-Woodbridge Winegrape Commission fits Dr. Clore's years of research and dedication to the Washington wine industry.

"As a grower from the state of Washington, I appreciate the knowledge, foresight, and vision that Dr. Clore has given. His integrity and drive have contributed to the success of our industry and helped pave the path of 'quality' that we continue to follow." ■

Head of an Old Man by Pellegrino Da San Daniele ca. 1500



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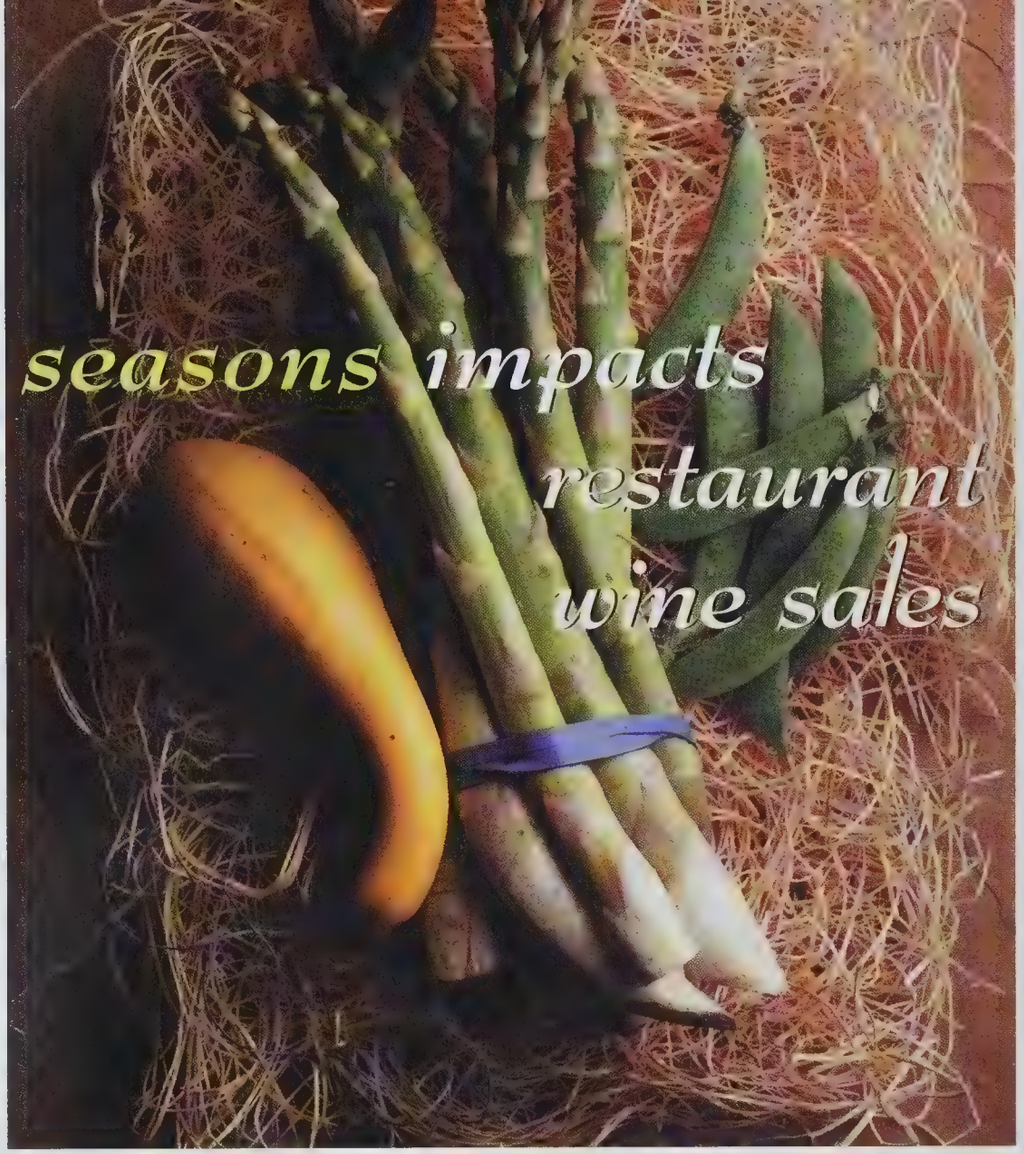
Coloring the seasons impacts restaurant wine sales



BY Eleanor & Ray Heald
Contributing editors

At Mistral restaurant and wine bar (Santa Rosa, CA), proprietor Michael Hirschberg and executive chef Scott Snyder create seasonal menus tied to varietal wines. They say the inspiration came from *Affinities*, a Kendall-Jackson newsletter for the restaurant industry. To a seasonal integration of kitchen and wine cellar, they added a thematic color spin cementing the relationship.

While the name Mistral denotes French Mediterranean cuisine, Hirschberg believes a restaurant needs more than one hook to promote diner interest in food and wine harmonies. "West Coast U.S. is a lot less tied to Europe than the East Coast," he maintains. "The wine industry and agriculture on the West Coast are strongly American. The name Mistral only hints at a basic cooking style. It does not fully define what we do."

The seasons-color concept not only showcases the culinary creativity of Chef Snyder and his inspired menus, it also offers waitstaff a launch pad to suggest complementary wines to diners and increase sales.

Hirschberg characterizes Chef Snyder as creative and, at the same time, grounded, eschewing the pretentious and ostentatious, in favor of each dish having great flavors and true wine compatibility.

Making the pitch

"When we launched the seasonal-color approach two years ago, people said that California does not have four seasons," Hirschberg recalls. "We rarely see snow, but we do have four seasons. Vineyards also have four seasons, so the tie-in works. And if it works here, it may hold greater promise for snowbelt states."

Mistral's menu pitches the seasonal-color concept in a daily dated menu that includes six or seven specials, featuring what's freshest from the market. There's also a four-course Tasting Dinner at two price levels, $34 (without selected matching wines) and $47 (with six two-ounce wine pours chosen as best food matches).

While the menu is a single page, Mistral's wine list is extensive, including not only California bottlings, but those from around the world, with a decidedly French and Spanish preference. Table wines by the glass are divided by style and described as "light, refreshing white wines" to "robust, full-bodied red wines."

Ten tasting flights, each with three two-ounce pours, are available and range in price from $8.50 to $10. Each wine in the flight is well described using sound, easily understood descriptors, such as "lightly oaked, green grass, and pears" for the 1999 Murphy-Goode Sonoma County Sauvignon Blanc. Throughout the main list appropriate descriptions are given for wines listed by varietal or country of origin.

Spring green and Sauvignon Blanc

Sauvignon Blanc and the smell of green grass speak to the year's first season. Food complements need the same quality. Mistral's menu announces spring with the first seasonal vegetables — peas, asparagus, spring onions, leeks, and scallions, all expressed on the menu as part of a given dish, side dish, or plate garnish.

Do all these veggies match Sauvignon Blanc? "They are well-tied to the crispness of Sauvignon Blanc," Hirschberg responds. "Consider texture not just flavors."

As a side dish, asparagus is complemented by herb aioli, orange, tangerine, or any citrus-accented aioli, which enhance wines in the style of the 1999 Rochioli Sauvignon Blanc.

Asparagus with risotto works well as does asparagus wrapped in prosciutto. Saltiness of the prosciutto cancels the high acid of Sauvignon Blanc and creates a different taste which accents fruit.

As an appetizer, Mistral may feature a leek and chicken mousse terrine, where the mousse layer is studded with fresh green peas. When served with green herb mayonnaise, it matches the light, crisp 1999 Hanna Sauvignon Blanc. With a truffle vinaigrette, the softer 1999 Murphy-Goode works best. Mayonnaise makes a Sauvignon taste richer, but the vinaigrette dials up the acid components.

Braised leeks with grilled chicken and herb-lemon butter create a double impact. If waitstaff encourage diners to observe what's happening on their palates, they can have a great food and wine experience.

Since the Mistral waitstaff has tasted through the Sauvignon Blanc offerings

(as well as all other varietals and categories on the wine list), they know which of them finish on the high-acid side or are smoother, richer, and bigger. They can gauge diner preferences by asking a few questions or by offering small, one-ounce tastes to guests who are unsure which style they like best.

"Peas are great to emphasize green and a first vegetable of the season," Hirschberg notes. "Toss them in butter with a soft egg pasta such as fettuccine. Pea soup, with or without cream, accented by mint, chives, and shallots is simple, but a great pairing with Sauvignon Blanc."

He suggests snap peas as a plate garnish with seafood, such as petrale sole braised in Sauvignon Blanc and served with a risotto tossed with green spring vegetables.

Summer gold and Chardonnay

Chardonnay's richness is mirrored by warmth, golden sunshine, and the overall abundance of summer.

Hirschberg's thoughts turn to golden tomatoes, yellow and orange squash, corn, chanterelle mushrooms, golden delicious apples, mangoes, peaches, and Pacific salmon as menu inspirations.

Matching Chardonnay with golden-colored foods is a matter of knowing the wine style and predictable level of oak, Hirschberg maintains. He says the best pairings are based on judging the weight of the wine and weight of the food in the mouth.

As an example, he cites a side dish of yellow spaghetti squash tossed with butter and toasted hazelnuts to match the Lambert Bridge style of Chardonnay. Garnished with toasted pistachios, it better suits the toasty oak of Sonoma Cutrer Les Pierres Chardonnay. However, corn chowder with roasted red bell pepper butter matches a broader range of Chardonnay styles.

Weightier foods need more substantial Chardonnays, generally those with bigger fruit, longer finish, and integrated oak statement. These matches also echo the golden color theme.

Mistral's kitchen staff salts and sprinkles golden tomatoes with olive oil, then oven-dries them. They are used on pizzas with shaved, dry, yellow Jack cheese, topped with a quick sauté of chanterelle mushrooms.

"Chanterelles create signature dishes for Chardonnay," Hirschberg contends. As a first course, he chooses dayboat scallops and chanterelles sautéed in truffle butter and served with crisp polenta. "Richness ties the scallops with the buttery chanterelles and plays off the polenta as an interactive medium between the ingredients and a richer Chardonnay."

Responding to a renewed interest in cheese courses, the Mistral menu may suggest a chunky compote of spiced, roasted yellow apples and a complementary French cheese such as Reblochon.

Golden hues of a fried Pacific salmon cake, rolled in panko crumbs and shaped like a pork chop, appeal to diners desirous of avoiding red meat. Accompanied by a mango relish, the salmon cake pairs better with a fuller-bodied Chardonnay Steele or Sanford Chardonnay than a red wine.

Autumn, red leaves, and Pinot Noir

To Hirschberg, autumn sings earthy notes and smoky characters achieved from grilling. Pinot Noir is the seasonal wine feature, but in his mind's eye, the red leaves are those of a Zinfandel vine.

Porcini and shiitake mushrooms, cepes, and cinnamon caps score in the earthy category. Mushroom tartlets are common appetizers on Mistral's autumn menus. Mushroom pizzas with pancetta and red onion combine earthy notes with the color red.

For younger, fruitier Pinot Noirs, such as Saintsbury's Garnet or the new Williams Selyem bottling from Mendocino grapes, nothing beats roasted Muscovy duck breast sliced like London Broil and garnished with roasted figs in 10-year-old balsamic vinegar from Modena, Italy. To accompany the duck, Hirschberg suggests a sweet potato or pumpkin and russet potato hash.

Hirschberg notes that the salmon flavors that worked smashingly with Chardonnay, when sauced with a tropical mango chutney, match surprisingly well with Pinot Noir, presented with a sauce made from a brown fish stock. For this preparation, Snyder roasts the salmon frame until it is a toasty golden-brown before making a fish fumet. To give the sauce texture, tiny red pearl onions and a soft mirepoix of autumn vegetables are added.

At a recent wine tasting dinner, featuring five different Pinot Noirs, the 1997 Rochioli was poured alongside roast quail with a dried cherry jus and a savory wild rice pudding.

Winter and inky black Cabernet

Hirschberg expands the wine category, complementing cooler winter temperatures and desire for warmth, to include not only Cabernet Sauvignon, but Syrah, Merlot, Cabernet Franc, and Petite Sirah, the blackest of all. Although considered more red than black, Zinfandel also gets a nod in winter.

Isn't black brooding and somewhat forbidding? "Not when a chef thinks of black olives, wild rice, black truffles, portabella mushrooms, black chanterelles, beef, lamb, and venison," Hirschberg answers.

Mistral addresses its Southern France and Mediterranean roots with Lamb Shanks braised in Syrah, topped with a gremolata of black olives, herbs, lemon, garlic, and shallots.

Beef medallions, napped with a bitter chocolate sauce, are Snyder's idea of having serious fun. The sauce is made by first reducing Cabernet Sauvignon, combining it with demi glace, and enriching it with butter and shaved unsweetened chocolate. Accompanied by vanilla-flavored mashed potatoes, it's sensational with a rich, but not in-your-face Cabernet Sauvignon, such as the Rafanelli, Geyser Peak, or Stonestreet "It's one time where the chocolate and Cabernet thing really works," Hirschberg says.

Essentially the same preparation with venison instead of beef, pairs to a rich, but subtler Syrah such as one from Michel Schlumberger or its Dry Creek neighbor Preston Vineyards.

Lighter-bodied Cabernet Sauvignons are recommended with toasted walnut bread squares, topped with gorgonzola cheese, alongside a salad of Cabernet-poached Bosc pears and winter lettuces.

Roasted goose or squab with wild rice cooked in poultry stock is a match for either Cabernet Sauvignon or Cabernet Franc.

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Fish with Cabernet? Yes! Imagine dark Ahi Tuna, prepared pepper steak-style, grilled black on the outside and raw/red on the inside, then sauced with a rich demi-glace and Cabernet Sauvignon reduction.

Even swordfish, a rich fish which ordinarily would trigger thoughts of a high-acid white wine, can be brought to the table with a "black" wine if it is marinated in soy sauce, grilled (or broiled) quickly, and topped with a tapenade made from oil-cured black olives. To further cement the match, serve the swordfish with a risotto, studded with black chanterelles, and a bowl of buttery braised chard or other winter greens.

The hearty richness of Cassoulet, made with duck sausage and dried flageolet beans, pairs well with a big wine such as Foppiano Petite Sirah.

Waitstaff training

At Mistral it's important that all dining room staff are comfortable talking about wine with guests. "They don't need to be walking encyclopediae," Hirschberg notes, "but they do need to know their way around our wine list."

To foster waitstaff knowledge, Hirschberg encourages staff to taste any of the 30+ wines that are open by the glass and to taste several comparatively side-by-side. Additionally, when the weekly four-course Tasting Dinner is created, either Laura Kudla, dining room manager, or Hirschberg makes sure the staff understands the food/wine match.

When there are special event dinners, everyone on the staff sits down to an after-shift communal meal where all of the dishes and featured wines are tasted.

Hirschberg also invites one or two staff members to each of the wine seminars offered monthly. Copies of the *Wine Spectator, Santé,* and other wine periodicals are available for the staff.

Secrets of success

Hirschberg's panoply of ideas matching seasons and colors to wines works for the kitchen and waitstaff at Mistral because considerable energy and thought have been put into staff training and delivery of the concept to diners.

Daily pre-shift education of servers, including wine reminders, are essential. Creating a wine and food passion among waitstaff is an additional, not-optional element of success and promoting wine sales.

One key concept, which Hirschberg says he has always adhered to, is that Mistral must make all of its guests feel comfortable, regardless of the level of their wine knowledge. That's why Mistral offers $15 bottles as well as those at $250.

"Our servers try to first discern the comfort level of each guest and then make wine suggestions using appropriate vocabulary," explains Hirschberg. "We are not preachy or presumptuous, but more focused on making wine fun and unintimidating." ■

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CABERNET SAUVIGNON WINEMAKING

Managing wine quality

BY Brooks Painter

One hundred winemakers met in early 2000 to discuss using market leaders as a benchmark by which to judge Cabernet Sauvignon wine quality at a symposium on managing wine quality sponsored by Enologix (Sonoma, CA).

"Last year's symposium topic was selected based on our statistical findings," explains Leo McCloskey, president of Enologix. Enologix is an information technology company with a large database for chemically based quality metrics in the California wine industry. "We discovered from analysis of over 15,000 recent grape and wine samples that the Napa Valley appellation produced the highest quality Cabernet Sauvignon weighted for volume for the period between 1992 and 1997," says McCloskey.

Enologix's first symposium, called "Bordeaux in America," was held to provide a forum to examine modern vineyard and wine quality management. The second in the annual series, called "Chardonnay in America," will be held April 4, 2001, at Ramekins in Sonoma, CA.

The Bordeaux in America symposium examined production of Cabernet Sauvignon throughout California. "For the first time in our history, it makes sense to examine competitors with the strongest market performances," says McCloskey. "Although great *terroir* may exist in any given region, Napa Valley has a proven track record of successful positioning in terms of both Cabernet Sauvignon market performance and regional identity with customers. The fastest way to achieve great California Cabernet Sauvignon wine quality from Paso Robles grapes may be to examine grapegrowing and winemaking in Napa Valley."

Successful Cabernet Sauvignon regions

Napa is only one of several California regions that is successful with Cabernet Sauvignon-based wines. It is a benchmark because it has an ideal combination of soil, climate, and a selection of quality Bordeaux plant materials well-suited to the *terroir*. But Napa is benefitting the most from early adoption of the traditional European "wine-farm" approach, claims McCloskey.

It has a quality management strategy. Napa producers have implemented techniques in the vineyard and winery to optimize wine color, fragrance, and flavor intensity, all of which allow wine marketers to promote brand identity.

But quality is just the beginning in Napa. Wineries now position "flagship wines" in a concerted long-range effort to make their wines market-benchmarks for consumers. "Napa will continue to be a Cabernet Sauvignon benchmark region because Napa winemakers have become leaders in scaling up of both pricing and production to 40,000 cases of fine wine," says McCloskey.

McCloskey asked attending winemakers, "How can a brand position itself as a *flagship* producer? Can a winery scale fine-wine production in a long-range effort to meet market demands? Is Napa now considered a Cabernet Sauvignon *benchmark* for winemakers? Should winemakers adopt new viticultural area designations to recognize regional excellence?"

These questions were debated in great detail at Bordeaux in America. Unsurprisingly, for a variety of competitive or philosophical reasons, not all of the participants agreed that Napa is or should be the benchmark. Discussion among panelists Joel Aiken, Andy Beckstoffer, Larry Brooks, Paul Draper, Leo McCloskey, Jeff Morgan, Pierre Seillan, Tom Shelton, Marshall Sylvan and the attendees was spirited and enlightening. Evidenced by the animated discussion, the symposium put its finger on the pulse of Cabernet Sauvignon winemakers.

Highlights are presented here, with contributions by program participants.

Paradigm shift

McCloskey started the discussion with a background summary of California winemaking and viticultural technological innovations. The period from 1970 to 1995 saw a revolution in the way Cabernet Sauvignon is made in California, according to McCloskey.

"In 1970, the wine industry was largely dominated by wine producers based in the warmer UC Davis Region IV-areas of California," notes McCloskey, "They produced mostly generic wines that were pleasant but generally not as intensely-flavored as today's luxury wines.

"In the mid-1970s, winemakers became convinced that Regions II and III offered a boundless opportunity to create 'Bordeaux in America.' As a result, industry leadership largely shifted to independent winemakers such as Robert Mondavi. Winemakers began to look for more than could be found in books such as *Technology of Winemaking* (Amerine *et al.*). Their goal was to make much more intensely flavored varietal wines based upon regional attributes."

Winemakers, such as Robert Mondavi, were forced to look beyond California in 1975. "Freelance winemakers trekked to Europe for new ideas," recalls McCloskey. "The French welcomed the chance to educate American winemakers. By the 1980s, we were making thousands of Cabernet Sauvignon wines on the North and Central Coasts using techniques adopted from Bordeaux, and these techniques began to evolve into production scenarios suitable for California viticultural areas. By 1996, the market, and critics, were saying Napa Valley had become a 'Bordeaux in America.'"

If the first shift was caused by winemakers such as Robert Mondavi, the next shift is going to be caused by information systems that predict quality, according to McCloskey. "Information technology from the Silicon Valley is already used at Enologix to predict the winemakers' tasting scores for Cabernet Sauvignons," he says. "Winemaking is really an art, not a science. Many crucial day-to-day winemaking decisions are based upon scientific analysis. But intuitive decisions can, at times, have a significantly greater positive impact on the wine than a reliance solely on the numbers."

Performance Metrics — How we measure Napa

Consumers are already seeing that many California viticultural areas will

increasingly promote themselves as varietal specialists, and it is natural for winemakers to focus on the varietals and wines that are most suited to their regional microclimate. Top Pinot Noir wines in California, for example, are accepted by many consumers to come primarily from coastal valleys with strong marine influences.

Dr. Marshall Sylvan, executive editor, *Global Vintage*™ (a trade and consumer magazine), suggests, "The first test of a U.S. viticultural area's success includes both economic and sensory metrics." *Global Vintage* uses a GV500™ wine-quality scoring system that measures the flavor intensity of Napa Valley versus Bordeaux Cabernet Sauvignons. It also tracks the region's Cabernet Sauvignon volume and price.

"Napa is the only American region that compares to Bordeaux because it has the triple success of high quality, price, and volume," adds Sylvan. "That is why no winemaker can continue to ignore Napa winemaking. Napa Valley offers consumers a dozen flagship wines, 24 luxury wines, and another hundred super-premium Cabernets." (Source: Gomberg and Fredrickson, San Francisco, CA.)

Flagship wines sell for over $60 per bottle with a GV score over 90 and annual volume of more than 6,000 cases. Luxury wines are also priced over $60. Super-premium wines are priced over $12 per bottle.

"Analysis of the average Napa wine's price-to-quality-to-volume ratios shows a linear relationship between objective quality scores (GV500) and price by volume," Sylvan says. "Many of these wines have begun to sell in volumes of over 6,000 cases for premium wines to the market. No evidence of this price phenomenon exists for Merlot, Pinot Noir, and Zinfandel wines or for wines from the Central Coast, Santa Cruz, Sonoma, or other major viticultural areas."

According to Sylvan, in economic terms, the Napa viticultural area was decoupling from other California viticultural areas in the market in 1995. It was behaving like Bordeaux before most observers realized what was happening.

"The largest problem facing the benchmark region is pricing a taste," added Sylvan. "Current national critics' ratings were never meant to price a taste. They are good opinions, but not market metrics. For example, many of the Napa producers who were price leaders in 1985 have largely disappeared by 2000. If Napa wants to protect its equity, it must adopt reliable ratings to reduce pricing risk to buyers, much as occurred in Bordeaux in the last century."

The view from Bordeaux

French winemaker Pierre Seillan suggests that the New World might one day adopt a combination of the classification strategies based on appellation, such as the AOC used in Bordeaux and Champagne.

Seillan, now a Kendall-Jackson winemaker with 20 years' experience in Bordeaux, says, "It is important for the future international market — which includes the U.S. — that the 'Grand Cru' from California be internationally associated and recognized with a *terroir* and winemaking definition that establishes a hierarchy of 'Cru' by quality. In that scenario, the organization of production, appellations, cru, *terroir*, and grape quality will be fundamental to the organization of the overall market, from grape supply to the final sale of wine to consumers."

Larry Brooks, a consulting winemaker with Enologix, agrees: "In Europe, it is axiomatic that the land is the brand. In the New World, *'vin de terroir'* is an emerging idea. There are opposing views, too. Large wine companies often want winemakers to emphasize the brand over *vin de terroir*.

"There may be no right or wrong answer to the question, 'Is geographic origin of wine more important than varietal?' Ultimately, the market dictates the answers. The California wine business is going to be compromised if mass producers and fine wine producers maintain clearly different biases."

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The emergence of Napa *vin de terroir* has increased the level of competition and the pace of change for winemakers.

"Once the Napa viticultural areas standardize varieties, clones, barrels, and what to do during the vintage," said Seillan, "the wine's flavor will be differentiated by the physical environmental factors (*i.e. terroir*) alone. It may then become necessary to classify Napa versus other viticultural areas or even the Napa *terroir*.

"If Napa is now a benchmark, it is in the Napan's interest to classify or otherwise protect the land, though not in the same way as the Bordelaise. It would not be advisable to copy the Appellation d'Origine (AOC) classification system in California. Napa needs a system that allows other regions to succeed, too."

Standard operating procedures in Napa Valley

Many winemakers agree that fine California winemaking is a combination of best practices and dedicated wine quality management. Some Napa Valley wineries have adopted best practices for Cabernet Sauvignon and included them as standard operating procedures in their production. This may have played a role in how Napa has managed to achieve its success in the marketplace.

One good example of a long history of Cabernet Sauvignon winemaking is offered by Beaulieu Vineyard (BV) for its Georges de Latour, Private Reserve bottling. It is clear that the best practices evolved after the wine boom of the 1970s, and it is equally clear that BV has significantly refined its standard operating procedures.

Joel Aiken, Beaulieu director of winemaking, described the evolution of production techniques for this wine: "Beaulieu's model developed over 60 vintages. In 1936, the first Georges de Latour Private Reserve Cabernet Sauvignon was produced using winemaking techniques that are no longer used by BV.

"During Andre Tchelistcheff's tenure at Beaulieu (1938 to 1973), there was large vintage variation due to diseased vineyards and lack of an infrastructure of quality management. By the end of the 1990s, Beaulieu's quality was enhanced to today's levels using formal management systems based on flavor analysis, which includes both sensory and Enologix analyses."

Producing Georges de Latour Private Reserve

"In reviewing viticultural practices, the changes that occurred in the 1950s, 1960s, and 1970s were modest in comparison to the changes that began in the 1980s and continued throughout the 1990s," recalled Aiken. "Prior to the 1980s, BV viticulture was integrated with production techniques from the *Technology of Winemaking*.

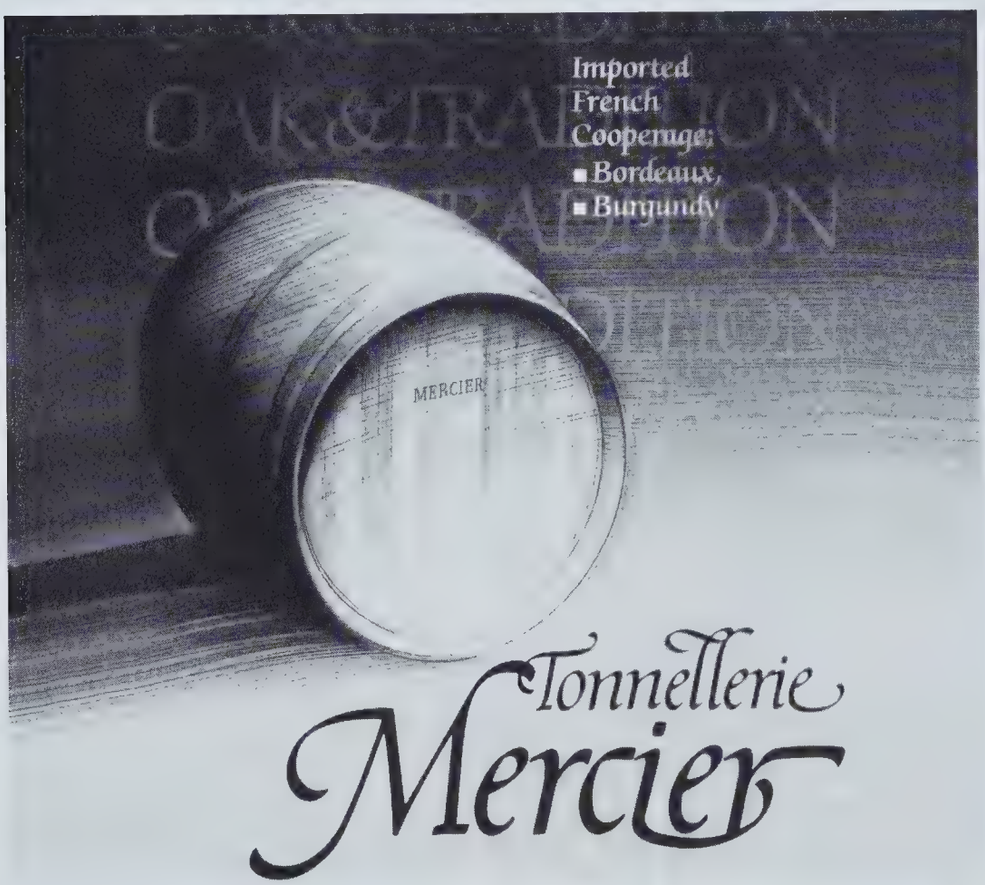
"Most Napa Valley vineyards had little or no irrigation, canopy management was minimal, and trellising was typically a 'California T.' Rootstock and clonal selection were extremely limited, and many vineyards were propagated with a high percentage of leaf roll virus. Most vineyards were planted to AXR-1 rootstock that proved to be susceptible to phylloxera. There was basically a 'one size fits all' mentality with very little attention paid to the needs of various sites. For example, most plantings were spaced 8x12 regardless of the vigor of the site or varietal.

"The current strategy is to manage grape flavor by selecting genetic material and practices that increase wine flavor intensity. Today, a site is evaluated for vigor prior to planting, and decisions such as rootstock, varietal, spacing, and trellising are made that allow maximum quality to be achieved from the site. Once the vines are established, soil moisture is closely monitored and moisture levels are maintained at optimal levels with irrigation and cover crop management.

"Modern trellising systems allow the fruit much more exposure to sunlight and air movement, resulting in increased anthocyanin development and decreased disease pressure. During the growing season, canopy manipulation, weak shoot removal, leaf removal, and green thinning allow fruit to be harvested with uniform maturity throughout a block, while underripe fruit has nearly been eliminated."

BV winemaking

"As with viticulture, many of the significant advancements in winemak-



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ing over the last 50 years have occurred within the last two decades when many practices were imported from France," continues Aiken.

"From 1950 to 1980, we used crushers and must pumps which were very rough on fruit which increased solids as well as tannins extracted from the skins, stems, and seeds. Management techniques within Beaulieu did not exist to improve extraction from the skins. Excessive acid additions as well as fining and filtration prior to barrel ageing resulted in wines that were very tight and lacked integration of oak and fruit.

"Today, we have changed the physical site and management strategy based on success within Napa Valley and Bordeaux. With respect to equipment: We use gentle destemmer-crushers and must pumps that increase the percentage of whole berries. Management includes cold maceration, extended maceration, and high-volume, low-pressure pump-over techniques which maximize color and flavor extraction from the skins while minimizing extraction of harsh tannins.

"Barrels that are aged and toasted to winemaker specifications are often filled with wine prior to completion of malolactic fermentation — a strategy of the small wine farm. The resulting wines demonstrate integration and need little or no fining prior to bottling.

"Our vineyard sites are considered by most industry insiders to be exceptional. Also, we have some degree of genetic control over quality; our selection of UCD clones 4 and 6 for the majority of our recent plantings has resulted in wines of higher concentration than in the past, when Clone 7 was the majority of our plantings.

"Next, we create several individual wines each year from within the vineyard; the final blend is made from components with multiple harvest dates, fermentations, and barrel ageing regimes. We can produce consistently high quality wine year after year by controlling the assemblage using color, flavor, and fragrance analyses and tasting."

Is Napa viticultural area "The best Cabernet brand?"

Joseph Phelps Vineyards (St. Helena) and Opus One (Oakville) make vintage-dated Cabernet Sauvignon wines in similar volumes (20,000 to 40,000 cases) to Chateau Lafite Rothschild in Paulliac, France, by selective blending within the Napa viticultural area. Tom Shelton, Joseph Phelps Vineyards president, discussed the issue of consumer recognition of brand versus viticultural area: The Bordeaux in America symposium posed the question, if the appellation becomes a more powerful motivator for consumers making a buying decision, "Is the land the brand?"

"This question, in itself, suggests a European marketing model and acknowledges that the California premium wine market is maturing along lines of competitive differentiation that must, at the very least, recognize viticultural area," says Shelton. "A competitive pyramid might appear something like this: brand identity forming the base, varietal identity next, then viticultural area, single vineyard identity, and proprietary identity rising to the peak.

"I place proprietary identity at the pinnacle because it is the best assurance of sustainable competitive advantage, providing, of course, you have the marketing capability to create consumer awareness. In general, prices follow this continuum, but prices, as we well know, are heavily influenced by scarcity, regardless of competitive references.

"Napa Valley is, perhaps, the most well-recognized viticultural area in the U.S. It produces less than 4% of California wine, yet I suspect that the average wine consumer would place that number somewhere well above 50%. Clearly, Napa Valley has marketed itself well, but the opportunity for inclusion among the prestige wine growing areas of the world would not exist without the special circumstances of ideal climate, soil, and expertise. In short, Napa Valley has taken marketing advantage of a very good situation.

"For good reason, the American Viticultural Area system in the U.S. does not have the authority of its European model. Grape plantings and yields are not controlled, and farming practices are largely left to the landowner.

"Napa Valley, however, has created a strong image, especially for Cabernet

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Sauvignon and other traditional Bordeaux varieties, because competition has evolved largely by advancing the criteria for quality. Thus, competition has created for Napa Valley what the appellation system has codified for Europe.

"It is not surprising to me that competition based on land or viticultural area is emerging as the ultimate arbiter of differentiation and quality. All of this provides favorable arguments for the supposition that the land is, indeed, the brand. In fact, Napa Valley vineyard land prices are at an all-time high, and considerably higher than other California viticultural areas."

Other sub-appellations and geographic brand references

"The Napa Valley viticultural area is of such importance to its wineries and growers that many were concerned when AVAs such as Stags Leap and Rutherford were established," according to Shelton. "This, it was thought, might dilute the successful image of Napa Valley."

In response to this concern, Napa Valley codified a "conjunctive use" labeling law that requires the Napa Valley name to be used in addition to the name of a smaller AVA within the viticultural area. This was a significant first step toward preserving the brand image of Napa Valley.

"In July 1986, the Bureau of ATF eliminated the use of geographic brand references when the brand name was in conflict with grape origin," continues Shelton. "However, geographic brand names in use prior to July 7, 1986, were 'grandfathered' by this rule. In 2000, the Napa Valley Vintners Association led an initiative to close this loophole with new state legislation that took effect January 1, 2001. The new law expands upon the legislative model used to create Napa's conjunctive labeling law and applies only to geographic references within Napa County.

"A related measure is formation of the Napa Valley Certification Board. This organization will control a mark of authenticity available to any Napa Valley wine that is 100% grown, produced, and bottled within Napa County. The new mark should appear on bottles beginning in 2001. These developments accentuate the concept that differentiation within the ultra-premium wine market is land-based. In other words, the brand has neither authority nor sustainable advantage without the land."

Counterpoint — Napa is not every winemaker's benchmark

Carmenet Vineyard's Meritage, Ridge Vineyard's Montebello, and J. Lohr's Hilltop are just a few of the Cabernet-based wines made from grapes grown and produced outside of Napa Valley. For a different perspective, Paul Draper of Ridge Vineyards (Cupertino, CA), with a background of more than 30 years of fine Cabernet Sauvignon production from the Santa Cruz Mountains, was asked to comment on the statement that "The national markets use Napa Valley Cabernet as the benchmark by which

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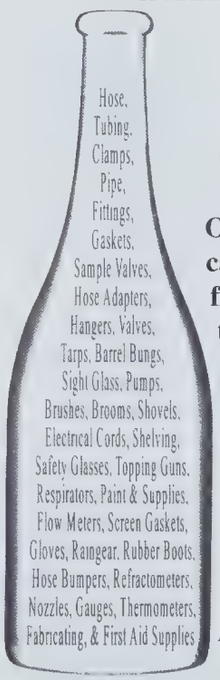

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to judge all New World Cabernet Sauvignon."

"I would disagree," responds Draper. "We have never found our markets (either national or international) to judge our cool climate Cabernets against a Napa Valley benchmark. We have certainly noticed that, on occasion, some members of the wine press have done so, but they are not our market and I think it's a mistake to confuse the two. The *Wine Spectator* for years seemed to feel all California Cabernet should taste like Caymus Select. I don't believe that is true today.

"Bob Parker, in exercising his personal taste, is championing several wines that all but a tiny fraction of his readers can never taste. I don't think he typically tastes blind or comparatively so he must depend on his excellent taste (palate) memory and his objectivity. But other than that, I don't think Parker has set Napa Cabernet as a benchmark. If anything, he has been so enamored of his first love, Bordeaux, that he has tended to overrate a number of over-cropped recent vintages. He certainly does not demand that all New World Cabernet taste like Bordeaux.

"Another point I've been asked to address is the potential benefits or problems caused by Napa Valley Cabernet Sauvignon in the marketplace. Clearly, the benefits are that more excellent Cabernet has been produced in Napa than in any other region of California in the last 10 to 15 years. That quantity of good wine helps the reputation of all California wine.

"The problems this presents? In the U.S. market I really don't see any, but there are some in the international market. The warmer climate style represented by the majority of Napa Cabernets is less familiar to most European and Asian fine wine consumers whose benchmark is Bordeaux.

"There is a tendency for these high-end buyers to assume that all California Cabernet is made in this fatter, riper style. In making a style based on our cooler climate, we have had to convince those export markets that there is more than one region and style in California. We sell more than 30% of our single-vineyard Montebello Cabernet Sauvignon to connoisseurs and collectors in Europe as well as to a limited number of buyers in other parts of the world. We are told that to these high-end buyers our style is more familiar than what is called here the 'Napa benchmark.'"

National Cabernet Sauvignon critics

"The need for information about wine quality (wine ratings) arises in the marketplace largely to inform buyers and reduce purchase risks," says McCloskey. "Media-based ratings are the result of subjective tasting and performance metrics. On the one hand they tell us whether the color, flavor, and fragrance of one wine is intense relative to other wines. On the other hand, subjective ratings are not always reliable and may vary by more than plus or minus five or six points on a '100-point scale.' Therefore, subjective ratings based on national critics' comparative tasting are an

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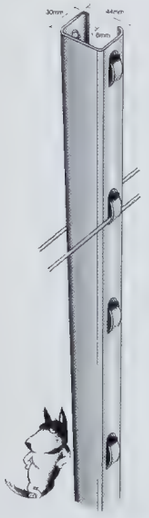

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increasingly contentious business practice in the opinions of some wine producers."

Jeff Morgan (formerly of the *Wine Spectator,* and now wine director for Dean and Deluca in St. Helena, CA) discusses the issue of ratings.

"Having been a member of the *Wine Spectator's* tasting panel for five years during my seven-year tenure with the magazine (ending in September 1999), and having experienced the ratings phenomena from both sides of the playing field, I'd like to share an insider's perspective on the 100-point scale.

"The 100-point scale embraced by Robert Parker some 20 years ago — and by the *Wine Spectator* soon after — has demystified wine for consumers and other recent converts to the so-called 'good life.' However, for winemakers, the process can be frustrating. In the Robert Louis Stevenson classic *Treasure Island,* any pirate marked with a 'black spot' knew he was a doomed man. Winemakers today live in fear of the modern day equivalent of Long John Silver's black spot. It's called an 89."

This rating is even more daunting when coming from certain reviewers. "Recently, one well-known Bordeaux winemaker told Morgan, 'There is only one wine writer in France who makes a difference in our sales. And he is nothing compared to Robert Parker and the *Wine Spectator*. Of course, there are other fine professional critics aside from Parker and the *Wine Spectator*. These tasters have their own following, but they just don't carry the same weight as the two industry mega-powers."

Should a winemaker actively attempt to make a wine that will do well in comparative tastings, even at the risk of compromising stylistic goals? Morgan states, "Ultimately, a great wine will sell itself. But it sure helps to have an endorsement by the *Wine Spectator* (with its quarter million paid circulation) or Robert Parker. These publications can create a cult wine with the stroke of a pen and a 95-point review. One winemaker told me that the 90-point rating I gave his wine moved sales from 1,000 to 6,000 cases per week."

The wine industry has seen a period of consolidation of distribution over the last 10 to 15 years and growth of new internet retailing sites. "With the arrival of the 'dot-coms,' will the likes of Robert Parker and the *Wine Spectator* retain their hegemony?" Morgan asks.

"To a degree they probably will, as long as they maintain their editorial and tasting integrity," he answers. "However, dot-com potential can hardly be ignored. The ability to reach an almost unlimited, newly plugged-in American audience leaves the world literally at the dot-coms fingertips. It is only a matter of time before many consumers opt for purchasing wine online. As interstate shipping opens up (as it slowly, but surely will), the dot-com audience will continue to grow."

The consumer is often relying heavily on the critics' subjective rating systems. "This brings us back to Long

Continued on page 50

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Three wineries receive Clear Choice Awards

BY Jack Heeger

As competition in the wine industry increases, the need also grows for producers to differentiate their products. Packaging has a major role in how wine is presented, and in some cases, it is as important to the sale as the wine itself.

Of course, packaging is equally important in other industries. That's why the Glass Packaging Institute, a trade organization representing manufacturers of glass containers, instituted its "Clear Choice Awards," in which outstanding glass packages of all types and for all products are honored. The GPI announced its 11th annual awards recently, and three wineries were recipients.

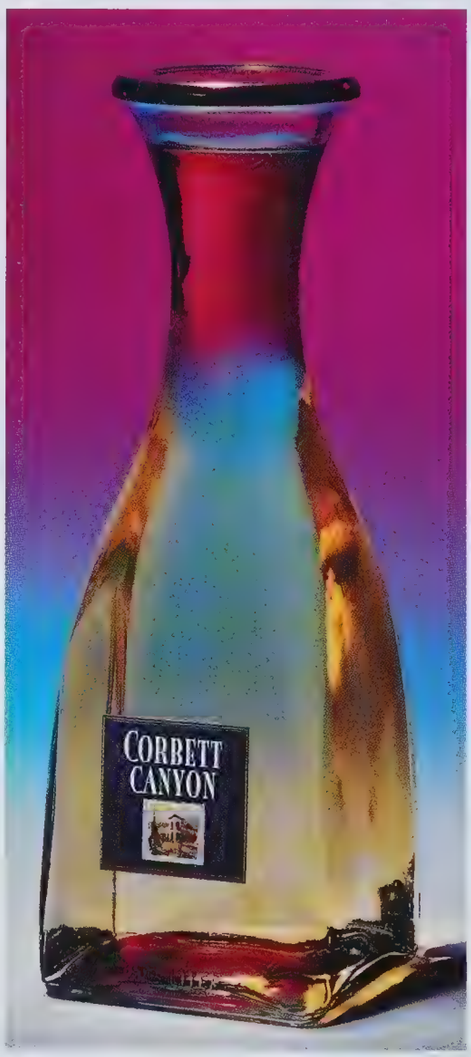
Corbett Canyon Vineyards (San Luis Obispo, CA) won the wine category award for its new square decanter; Canandaigua Wine Company (Canandaigua, NY) received the Success Story award for its Arbor Mist package; and Honig Vineyards (Rutherford ,CA) took an honorable mention for the "see-through" label on its 1998 Sauvignon Blanc bottles.

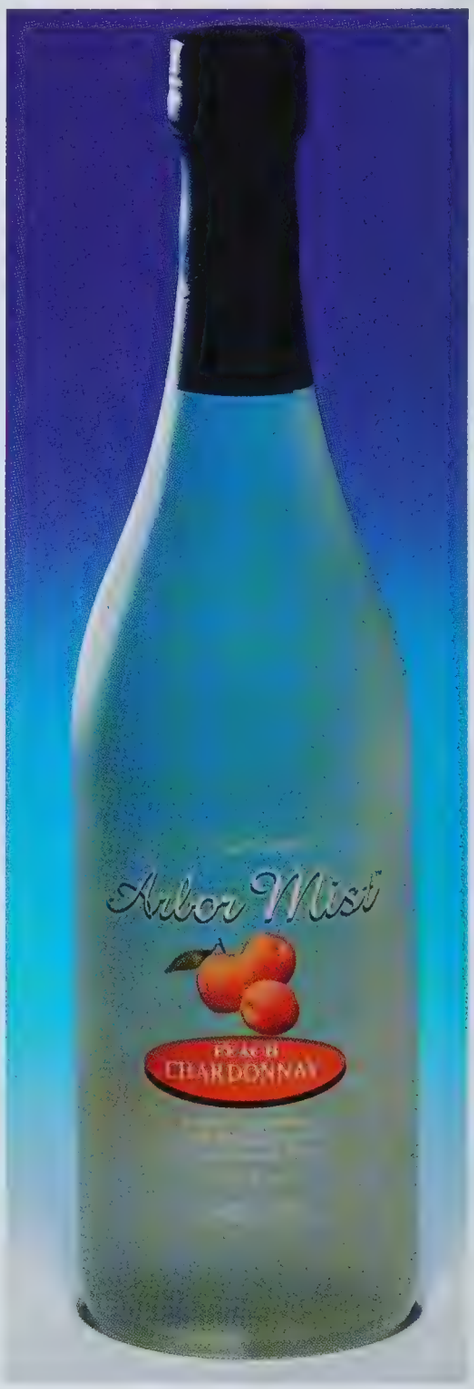
In all, GPI hands out eight awards, plus honorable mentions when warranted. Each winner receives a Steuben glass star, and $1,000 is donated to a charity of the winner's choice in the winner's name. Joseph Cattaneo, GPI's executive vice president, calls the program the "Academy Awards for the Glass Industry" and says it is "an opportunity for the industry at all levels to get some recognition." The awards were individually presented to each winner early this year.

Corbett Canyon

Corbett Canyon's new one-liter decanter package was introduced in 1999 to expand the product's restaurant and home dining usage, according to the official awards entry. "Clear pressure-sensitive labels are added to highlight the brand's image through the entire life cycle of this collectible package. Consumers are encouraged to re-use when serving other wines or for use in home decoration."

Robert Walker, vice president of marketing for The Wine Group, San Francisco-based parent company of Corbett Canyon, reports that, in the first full year after the decanter was introduced, sales of the brand increased 10%. He declines to reveal





exactly how many cases of the decanter bottles were shipped, however. Total Corbett Canyon shipments were slightly more than 3 million cases.

Restaurants use Corbett Canyon as their house wine, Walker notes, because it's profitable — "they can get six to seven generous pours from a bottle." He adds that some restaurants pour a glass of wine from the decanter right at the table. "It looks good," he says.

The decanter was produced by Anchor Glass Container Corp. and follows the same basic concept as the now-familiar Corbett Canyon bottle with the square bottom and rounded shoulders.

"They like the square-to-round transition," says Sam Wilson, general manager for new product development for Anchor Glass, "so instead of the traditional carafe, we developed a clear bottle with a simple, square base and rounded top. It took us a few tries to get it right, but I understand the package flew off the shelves when it first came out."

The decanter is closed with a traditional snap-on cap generally used on smooth finished bottles, which is produced by White Cap. Pat Welch, White Cap director of sales, describes it as a 72 mm Deep Snap Reseal (DSR) cap made of metal with a plastic liner and says it is applied with a vapor vacuum sealing machine. The design on the face of the cap is lithographed.

Clear pressure-sensitive labels for the decanter were created by Spear, Inc., using a solvent-based acrylic adhesive designed to stay on the container, explains Dan Munzer, Spear's marketing director. "It keeps the product identification throughout its life." He adds that, regardless of what the bottle is used for after the wine is finished — flowers, or water or other wine — the label remains. It is made from a Biaxial-Oriented Polypropylene (BOPP) film; as the film is formed, it is stretched two ways to provide a flat, clean surface.

The front label is printed in seven colors with a combination of three processes: rotary screen, which lays down a thick opaque surface with rich color; rotary letter press, which prints the fine detail; and hot stamping, which provides the matte gold finish that can't be achieved by the other processes. The back label is screen-printed in only two colors. Munzer says that although the label is on the product for life, if a mistake is made on the bottling line, it can be peeled off easily, but it must be removed within one hour. "The label bonds completely within 72 hours," he adds.

Canandaigua's Arbor Mist

In announcing Canandaigua's Arbor Mist as the Success Story category winner, the Glass Packaging Institute said the award was "judged on sales success over the past year as well as packaging that enhances product appeal. According to Canandaigua, Arbor Mist is the most successful wine product launched in nearly 20 years."

Jon Guggino, brand manager, says Arbor Mist was introduced in June 1998. It is a wine-flavored product that Canandaigua calls "wine with fruit," featuring seven flavors — Blackberry Merlot, Sangria Zinfandel, Exotic Fruits White Zinfandel, Cranberry Twist White Merlot, Strawberry White Zinfandel, Tropical Fruit Chardonnay, and Peach Chardonnay. Guggino attributes much of the success the brand has enjoyed to the bottle, calling it a "unique package."

Forward Branding & Identity (Rochester, NY) helped develop the brand, and Jim Forward, president of the firm, says a team of employees worked with Guggino and his group at Canandaigua to develop the concept, which combines a graphics treatment, the misted-effect bottle, and a striking label.

The bottle is dipped in acid to achieve the frosted or "misted" effect. This created a problem in affixing the label, according to Spear's Dan Munzer. He explains that, if a standard self-adhesive label is applied to the etched bottle, a chemical reaction occurs which causes the adhesive to fill the grooves of the etching, making the glass clear again. "So we came up with a frosted label that matches the acid etch of the bottle," he says, adding, "It's a lot harder to do it than to say it. We went through hundreds of tests before we finally got it."

The front label is printed in seven colors using rotary screen and rotary letter press methods similar to those used in producing the Corbett Canyon label. The back label is screened in three colors.

Honig Vineyards

Honig received an honorable mention for its new 1998 Sauvignon Blanc bottle, which was designed to reflect the role played by the vineyard in winemaking. The official entry, submitted by Honig marketing manager Elaine Honig, says, "Taking advantage of the clear glass, we printed a scene of the vineyard on the inside of the back label, which is visible through the glass. The curved bottle with liquid inside magnifies the picture, enhancing the effect."

Chuck House, a Sonoma County designer, created the design, saying he wanted "something that was fun and friendly with a lot of character. The point of a wine label is to show what's in the bottle, not on it. This does that."

The front label, placed low on the bottle, depicts a ridgetop view from Napa Valley's eastern hills, and the back label shows the vine-filled valley looking westward toward the Mayacamas range. "It feels as if you are in the Napa Valley, looking over it (a vineyard) and into the valley beyond," the entry form explains.

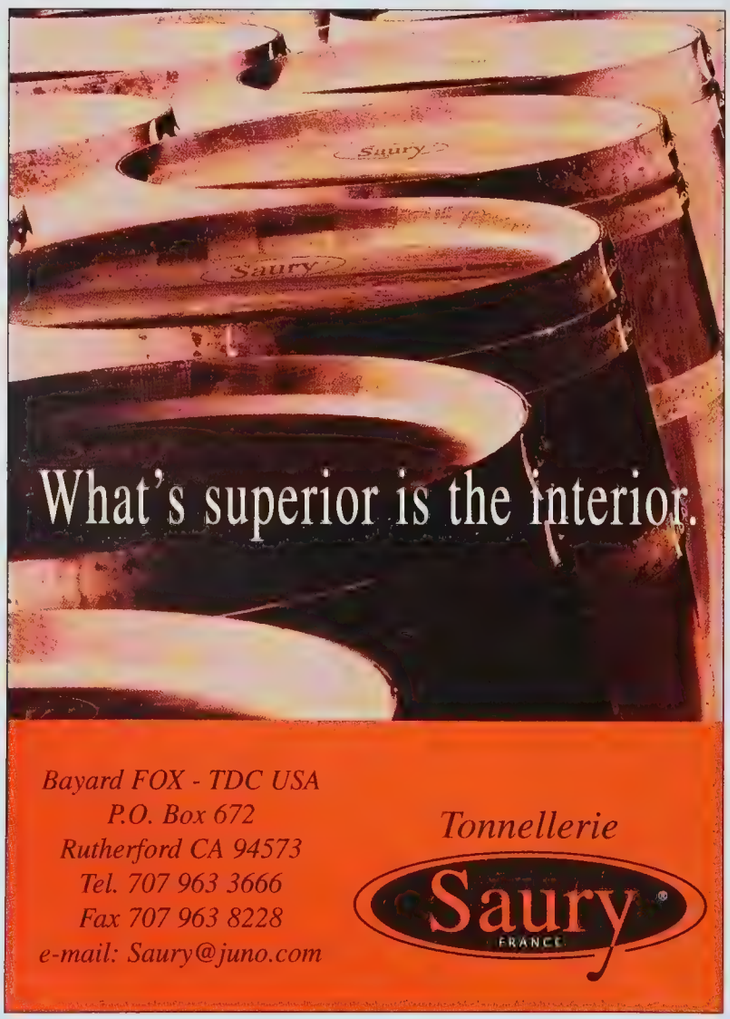
"What's in the bottle (the wine) is nestled in the environment in which it was born, and it reflects what's in the wine and the winemaking (process)," House explains.

Printing the Honig label presented a challenge for Estate Wine Label Co. (Napa, CA), according to general manager Dave Osmundson. Normally varnish is placed on the front side of a label to prevent scuffing in the shipper or during handling, but because the image was printed on the reverse side of the back label, no varnish was used. Instead, a light coat of primer is applied that is receptive to the clear glue used to apply the label to the bottle. "We tested this many times to make sure there would be no problems on the bottling line," he said. "We headed off potential problems before they occurred."

Each time his firm prints the label, Osmundson's team takes bottles filled with wine from that vintage, puts press proofs on the bottles, and then adjusts the colors to work with the wine color. Yellow is a primary concern because it can disappear into the color of the Sauvignon Blanc, explains Osmundson.

Honig produced 22,000 cases of Sauvignon Blanc, 2,000 of which were a reserve bottling. The reserve package has a slightly heavier bottle and a band on the neck. ■

Information about the Clear Choice Awards and the Glass Packaging Institute can be found at www.gpi.org



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INTEGRATED VINEYARD MANAGEMENT

Decreased spraying improves quality, nature, bottom line

Photos by Fred Lyon

BY Bill Petrovic & David Rosenthal
San Bernabé Vineyard, King City, CA

The physical size and length of vine rows at the San Bernabé Vineyard (King City, CA) mandate that the majority of the spraying is done at low (30 gallons per acre) volume. In many blocks of the almost 7,800-acre ranch, one complete tractor-trip covers approximately 10 acres with a 300-gal. tank or 16 acres with a 500-gal. tank.

Combined with hilly terrain, which limits the total carrying capacity of a spray rig, the need for lower volume is clear. Secondly, with so many acres to spray in a timely manner, fill-time is down time, which decreases efficiency and acres covered per day.

Afternoon winds which cause evening cooling at San Bernabé also limit the usable spray hours in a day, mandating a 3 a.m. start time for the spray crew. The sprayer must generate enough velocity to overcome the wind. However when the wind velocity exceeds five mph, the spray program is required to stop for the day.

Trellis systems, row spacing, and grape variety (separately and in combination) determine the equipment, materials used, and application frequency. Chardonnay, which has the highest risk for powdery mildew, may receive five spray applications of sterol inhibitors and wettable sulfur per year, plus eight sulfur dustings.

Cabernet Sauvignon may need only two fungal sprays and eight sulfur dustings. Chardonnay trellised on Smart-Dyson or conventional bilateral cordon can be done with span sprayers, electrostatic sprayers, or air-blast sprayers at low to moderate (30 gallons per acre) volume. Chardonnay on a split canopy is better served with an air-blast sprayer, which can pene-

Low volume over-the-row sprayer

High volume (30 to 200 gallons per acre) air blast sprayer.

Electrostatic two-row sprayer.

trate under the canopy with an upward diagonal pattern.

Material and labeling restrictions are other factors determining the type of sprayer needed. Certain materials have restricted use to 50 or more gallons of spray solution per acre. An electrostatic sprayer cannot effectively charge material above 35 gallons per acre, and span sprayers at 50 or above have to run at a reduced speed to generate the volume of material required per acre. When using certain products demanding higher (above 50 gallons per acre) volumes, the air-blast sprayer is the answer.

Spraying equipment

The foundation of a spray program is the material delivery system. Due to its canal and well system, San Bernabé has unlimited water sources, but we still have to deliver water to the mix tanks. Four thousand-gallon water trucks deliver to a series of mix tanks, which in turn pump into the individual spray rigs. Three types of sprayers — spraying three distinct spray mixtures in any combination of trellis and variety — are typical.

San Bernabé has been experimenting with electrostatic sprayers for several years, building its own tanks and boom systems and using commercial manufacturers' spray heads. Electrostatic is an excellent concept, and the ultra-low (10 to 12 gallons per acre) volume allows the potential for increased efficiency due to less fill-time. Due to its low volume, certain materials cannot be used (Rovral, Procure, and Rally), and on high heat (above 90ºF) days, the material evaporates before it hits the target.

Another electrostatic spray rig can deliver up to 35 gallons per acre of fully-charged material, which seems to fit San Bernabé conditions well. This spray rig was redesigned to fit San Bernabe's needs by the equipment staff at Coastal Valley (the management company which farms San Bernabé).

Electrostatic spray rigs encapsulate the target with material as they are designed to do if there is nothing behind the intended target. Early in the season

when there is little leaf mass, the process works effectively. However, if there is a leaf on the backside of a cluster, the material will coat the leaf and not the backside of the cluster. On high fungal-sensitive varieties such as Chardonnay, leaf-pulling increases the efficiency of all sprayers as the season progresses.

The span sprayer has been the workhorse for many years, but the horse is getting lame. Span sprayers use air as the carrier spraying 30 gallons per acre efficiently. The main problem is the heart of the system, which is a hydraulically-driven fan. The fans have to be continually rebuilt since they turn at high rpm and leak oil when a seal fails. This factor, combined with low visibility at night leads to hydraulic oil burn on the canopy and grapes. The span sprayers will be phased out in the near future at San Bernabé (three to five years).

Air blast sprayers with towers are the most versatile spray rigs, since they can be used efficiently at both low (30 gallons per acre) and high (200 gallons per acre) spray volumes. They are the choice for dense canopies and materials (Rovral, Procure, and Rally) requiring high volumes.

In 2000, we tested a four-row sprayer mounted on a custom over-row tractor. This is a sprayer, which works best when delivering 25 to 30 gallons per acre. Due to the sprayer covering four rows, it has to be low volume or it would not complete a pass in the longer (one-mile long) rows in the vineyard. The sprayer has a boom which levels to the terrain — opposite of how the machine levels.

Methodology and Philosophy

San Bernabé is unique in that the staff determines when and what to spray. There is an in-house pest control agent (PCA) and an in-house lab to perform field checks. There is no commercial application of spray material or field-checking by an outside vendor. The lab uses three or four ranch-trained personnel, full-time employees who oversee seasonal crews during pruning to check the fields on a weekly basis. The crew does excellent, concise work, which allows real-time response to problems and the ability to postpone sprays.

Having accurate data from the lab and the use of an ADCON system (a weather system that calculates a severity index for powdery mildew) allows us to extend time intervals between sprays.

The only commercial influence in the disease control spectrum is the use of an airplane applicator for sulfur dusting. Applying sulfur via airplane allows quick response to wet weather rather than waiting for the ground to dry to allow tractors in. Airplanes, of course, can also cover many acres per day. Sulfur is a wonderful preventative treatment for mildew, and it allows longer intervals between foliar sprays.

San Bernabé is one of the founding members of the Central Coast Vineyard Team, a group of growers and wineries that is looking at an environmentally balanced approach to farming and chemical use. We have been using permanent cover crops (Blando brome, zorro fescue, natural/native grasses) to promote beneficial insects, and using target-specific conventional chemistry and effective organic materials in our spray programs.

Currently, we are using a myriad of organic compounds (Bts, soaps, and oils) and have selected Bts *(Bacillus thurengiensis),* all of which have efficacy in our program. The one drawback of most organic material is that it has to be applied within such a narrow time band, making it impractical except on small (less than 500 acres) acreage.

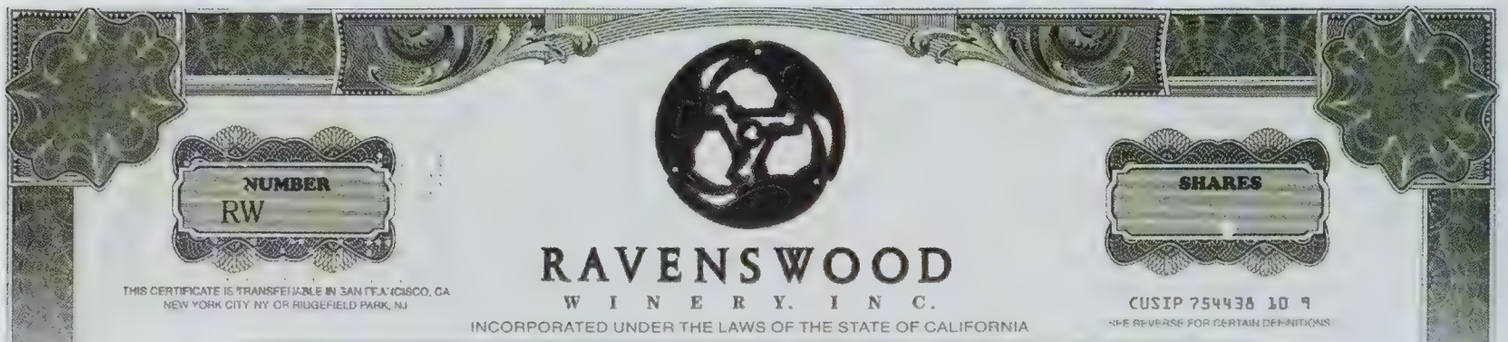
Not only do we spray only when positively needed, but we also alternate our materials so that resistance to a specific material is not established.

Conclusion

Because of its size, varying trellis systems, and spectrum of grape varieties, San Bernabé cannot depend on one type of sprayer. The trend at San Bernabé will be to stay on the lower end of volumes, approximately 30 gallons per acre, since that is the level where spray efficiency and acre-coverage are most effective. We must have the option to have efficiency on both the higher and lower volume ends for any situation beyond the norm. Having a combination of air-blast and electrostatic machinery enables us to accomplish that objective. ■

Span sprayer (30 gallons per acre).

EMPLOYEE INCENTIVES



Spreading the wealth via employee stock ownership

BY Jack Heeger

"It's a good company." It's a good investment." It's a good way to put money away for the future."

Those are a few of the comments from employees of Ravenswood Winery (Sonoma, CA) talking about the employee stock purchase plan the winery offers to all 60 full-time permanent staff members.

When Ravenswood completed its public stock offering in April 1999, employees were given the opportunity to purchase stock at a company-subsidized discount. The company also offered stock options to each employee with an exercise-price equal to the offering price.

An extension of family

"We've always felt that our employees had a vested interest in how our wine turns out and in how the business is run," says Joel Peterson, winemaker and president, who co-founded the company in 1976. "I've always believed that everyone here is just like a family, and this (the stock purchase plan) is an extension of that. It will develop even more loyalty than we already have."

Justin Faggioli, executive vice president, adds, "It is consistent with our egalitarian philosophy. If the company does well, we want the employees to share in it, and going public gave us the opportunity to do it."

But Faggioli says the stock purchase plan and options program are not the primary influence in good people coming to work for the winery. "The driving force is working for Ravenswood," he says, adding that employee turnover is very low. "Most people who work here want to work for Ravenswood. The additional compensation is secondary."

Although the stock plan is only one part of the range of benefits available to Ravenswood employees, Peterson says, "It's a nice tool to add to the overall package."

In addition to the stock purchasing programs, Ravenswood offers its employees a 401K plan that matches up to 4% of each employee's contribution. The plan vests immediately.

"It's in keeping with our philosophy — get the benefit right up front," Faggioli said. "If we treat everyone equally, they'll remain a member of our community." Although the prospectus filed with the Securities and Exchange Commission indicates that shares in the company can be given as bonuses, Faggioli says bonuses are paid in cash.

Employees are kept up-to-date on the financial status of Ravenswood. All are invited to attend the company's annual meeting, regardless of whether they are stockholders, and they're given all the financial statements. "They've always been invited to the annual meeting even before we went public," adds Callie Konno, chief financial officer.

Investing in their future

To date, about 20 employees have taken advantage of the stock purchase plan, purchasing about 2,300 shares. Twelve signed up immediately after the plan was announced. One of them was Chris Clemens, a 10-year employee who manages the bottling line. Clemens said he bought the stock because, "It's a good company, a good investment, and the company subsidizes the investment."

Denise Facendini, Ravenswood's accounting manager for nearly four years, says, "I wanted to own stock in the company. It was a good thing to do for my financial situation. It's like a security nest egg if you ever need it."

The stock purchase plan makes it as easy as possible for employees to participate. They can sign up as soon as they are hired on a full-time basis. A predetermined amount, ranging from 1% to 10% of their base pay, is deducted from their paychecks. The stock is purchased at 85% of the lower market price on either the first business day or last business day of a stock purchase period. Two purchase periods currently exist — Jan. 1 through June 30, and July 1 through Dec. 31.

"It's a way to save for the future," says Kristin Wastell, merchandise buyer for the tasting room, who has worked at Ravenswood for five years. "You can put money away, and it's painless."

For almost a year after the plan went into effect, the stock remained fairly steady at the $10.50 per share offering price. But when Beringer Wine Estates was bought by Foster's Brewing Group in late 2000, most wine stocks increased in value. Ravenswood rose as high as $15.375 before settling back to the $13.50–$14.50 range.

Explaining tax consequences

If employees withdraw from the plan or stop their payroll deduction, they must wait for reinstatement until the next investment period. They can sell their shares at any time, but as with any other investment, selling can trigger tax consequences. Prior to purchase, the company explains to each employee exactly how any gains are taxed, and how the discount on the purchase price is handled.

If the stock is sold within 18 months of purchase, the discount (the 15% difference between the market price and the price actually paid) becomes W-2 income, and any gain resulting from an increase in the stock price is classified as a short-term capital gain and taxed as ordinary income.

If shares are held longer than 18 months, the discount becomes ordinary income, but is not reported on the employee's W-2 form. Additional gains through price appreciation are considered long-term capital gains taxed at a maximum rate of 20%.

When Ravenswood went public, the management team recommended that the board of directors grant stock options to every full-time permanent employee. New full-time hires are granted options after they have successfully completed a 90-day "introductory" period, Faggioli explains. The current proxy statement calls for 500,000 options, and Konno reports the company is reaching that limit. "We're going to have to authorize more," she notes.

When employees are granted stock options, they are given the opportunity to purchase stock in the future at a specified price (in Ravenswood's case, $10.50 per share), the same price as when it was first offered to the public. This price remains constant regardless of the stock's market price at the time the employee exercises the option (purchases the shares). The options vest over five years at a rate of 20% per year, and all options must be exercised within 10 years. Vested options can be exercised at any time.

Employees who participate in the stock purchase plan or exercise their stock options are restricted as to when they can sell their shares. All employees are considered insiders, and they can sell shares only during a 30-day period beginning three days after earnings are announced publicly. These announcements are made each quarter.

Novel public offering

The decision to go public was made to raise cash for the company, Faggioli explains. According to the prospectus, the funds were used "for wine inventory, for expansion of production facilities, for general corporate purposes, and for retirement of indebtedness."

The offering was conducted by W. R. Hambrecht & Co., a San Francisco, CA firm, and it caught the attention of investors throughout the U.S. — not so much because it was for a winery but because of the history-making method used to sell the shares.

Ravenswood was the first company in any industry ever to sell its shares via what is known as a "Dutch auction" conducted entirely over the Internet. Bidders logged onto the Hambrecht web site and indicated the number of shares they wished to purchase and the price they were willing to pay. After all the bids were in, a formula was applied to determine an offering price and to allocate shares based on bids that had met that minimum price.

The offering was then set at the highest price at which there was enough demand for all of the shares. All winning bidders paid the same price, regardless of what their original bid was. Winning bidders were determined by a formula which took into consideration the price they bid, the number of shares they requested, and the number of shares available. Anyone who bid lower than the final price did not receive any shares.

When the two-month-long auction closed April 8, 1999, one million shares were sold to investors at $10.50 each, with individual investors purchasing about 70% of the available shares and institutional investors taking the balance.

Hambrecht & Co.'s owner, William Hambrecht, is no stranger to the wine industry. He owns Belvedere Winery in Sonoma County and is a partner in Carneros Creek Winery in Napa. He previously was with Hambrecht & Quist, which handled the public offerings of Beringer Wine Estates and Robert Mondavi Winery.

When Foster's announced that it planned to purchase Beringer Wine Estates, the investment community's focus was drawn to the wine industry, recalls Jeannette Long, who handles Ravenswood's investor relations. "It showed where Ravenswood was in value within the industry." That's when the Ravenswood stock took a jump, gaining almost 50% at one point.

"It's a very solid company, and we have good earnings growth," says Clemens. A seven-year chart shows a steady increase in both sales and earnings, with sales reaching $33.2 million in fiscal 1999 and earnings reported at $5.8 million.

Employee stockholders seem optimistic about the future. Alan Wastell, tasting room manager, says, "It (the stock) is beautifully set to continue to grow."

Peterson points to Ravenswood's steady growth over the past 20 years. "It's clearly undervalued as a stock at this time," he says.

The idea of stock options might have been appealing to some because of the many stories about instant millionaires created when technology companies have gone public in recent years. But in the spring of 2000, when stock in many of those companies' took a nosedive and employees watched the value of their options plummet to prices well below the option price, some Ravenswood employees may have wondered whether their options would suffer a similar fate. Instead, the stock price did just the opposite. The 52-week low for Ravenswood occurred about the time the NASDAQ slide started, but it began a gradual climb shortly after.

Kristin Wastell says, "For people who work in a winery, the idea of stock moving up right away is unexpected, not like a tech company. I never expected it to be anything other than long-term, and I'm in it for the long-term."

"I don't think winery stocks will ever make big money, not like tech stocks," observes Wendy Fantozzi, warehouse manager who joined Ravenswood in 1996. Fantozzi's parents also are stockholders — they bought it through the auction. "They didn't even ask for my advice. They bought it on their own as an investment."

When Kristin Wastell and Clemens were asked whether they were concerned as they watched the dot-com stocks drop, Clemens quickly replied, "Nope. We actually produce something." Wastell chimed in, "And they (the public) like it. They can actually come see where it's made." ■

New Fetzer winery utilizes E3 design

BY Tim Mark Woodle, AIA
Pults & Associates, Architects
San Luis Obispo, CA

Fetzer Vineyards is a sustainably-minded company with a strong commitment to the environment, to enhancing the quality of life for people, and to making money, since, without profit, the company has no means to affect the other two areas. Top management believes that business really is the vehicle by which environmental and social issues will be addressed and solved.

Fetzer expresses this philosophy in its E3 Action Statement for Environment, Equity (people), and Economics. This philosophy was the guiding force behind all business decisions in the master planning, design and implementation of the Fetzer Central Coast Winery (Paso Robles, CA), which began operation with the 2000 harvest.

The Fetzer E3 Action Statement says:

We challenge ourselves to act in ways that:

Benefit the people with whom we work;

Support the communities in which we do business;

Protect and sustain the environment; and

Achieve exceptional financial returns.

Fetzer management challenged the winery design team to create an efficient red wine facility with an eventual 20,000-ton capacity. The goal was to maintain and continue to improve quality and to step outside the box and

take a fresh look at red wine fermentation, using e3 as a guide.

Particularly important was the directive to eliminate the need for employees to enter fermentors to remove pomace. Fetzer employees should not be required to perform this potentially dangerous task. This became a primary goal of the winery design team.

Programming, master planning, and R&D

Close coordination between facilities, winemaking, and the design team was crucial to insure that the winemaking process would define the facility design and that the facility design would support the winemaking process.

Tony Matthews, director of operations, was Fetzer's point man for the project. Pat Voss, senior vice president of operations, oversaw the effort. The winemaking staff's participation in planning was led primarily by Dennis Martin, vice president and winemaker, and Heath Dolan, winemaker.

Initial master-planning efforts consisted of brainstorming sessions between this core group at Fetzer and the architectural team. A variety of masterplan approaches from mild to wild were looked at. The brainstorming resulted in circular arrays of tanks around presses, (dubbed by Dennis Martin as the "pods of Paso"), presses on a subterranean level, conventional fermentation bays with conveying systems for red pomace, and multi-level configurations, but the issue of pomace removal remained.

In taking a fresh look at winemaking as a facility design tool, the Fetzer winemaking and facilities departments and the design team also began an extensive research and development project dealing with red fermentation, cap management, and pomace handling.

Early in the R&D effort, the winemakers decided not to reintroduce free run wine back into fermentors to sluice pomace out of the fermentation vessel. For the 1999 harvest, Fetzer built and experimented with a variety of fermentation vessels at its Hopland, CA, facility.

At this point, winery consultant Paul Smith (St. Helena, CA) joined the brainstorming team. His assistance was vital in that he brought "out of the box thinking" and continued to challenge winemaking staff to think the same way. Smith suggested several winery designs for cap management, based on his experiences at other facilities, and pushed hard on the concept of "cap management as a stylistic tool for the winemaker."

This led to thought-provoking discussions, lots of creative thinking,

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The elevated fermentors allows pomace delivery into a very short (10-foot long) conveyor that drops pomace into the press. Photos by Chuck Crotser

and design sketches. Summit Engineering, of Santa Rosa, CA, brought valuable technical expertise to the masterplanning. Other members of the R&D team included Ron Schmidt (Coast Winery Systems, Santa Maria, CA), Dan Klien (Leonard Engineering, North Hollywood, CA), and Steve Pesenti and Jason Carter of Fetzer Vineyards.

The search for the methodology that matched the winemaking goal and style took the winemaking team to Vandegras in Languedoc, France, during the summer of 1999. There, the winemakers first observed static fermentors with sloping bottoms purported to be essentially self-emptying. Winemakers and facilities representatives returned to France in September to observe the fermentors in action during the 1999 harvest, and this concept became part of the plan.

The challenge was how to elevate the fermentors to a height that would allow pomace delivery into the press. Winemaker Heath Dolan proposed the solution: What better use of the space below the fermentor than the storage tank itself? The resulting two-chamber tank has a 50-ton (15,000-gallon) capacity fermentor above a 30,000-gallon storage tank. A 30º sloping fermentor bottom serves as the divider between the chambers. The challenge was that it all had to be built for use in seismically active California.

Structural engineers, Zucco-Fagent Associates (ZFA), in Santa Rosa, CA, produced a workable design for tanks that met earthquake zone-four requirements. ZFA also assisted with structural system layout for the metal building superstructure, and with design of the foundation, catwalks, and mezzanine.

For the sake of efficiency and economy, we chose a mobile conveyor (easily movable by a few workers) to deliver the pomace, and a mobile press. Design and construction of the conveyor ultimately was completed by Martin-Sprocket Corporation (Texas).

Winemaking chose a Diemme tank press for the first phase (5,000-ton capacity) of the winery. It is equipped with an onboard drivetrain and is mounted on rails, which allows it to travel to the fermentor. The result is a very compact fermentation room. In order to insure worker safety and efficiency, the fermentation room includes a full work platform over the mobile press (see drawing on page 42).

The fermentor/storage tanks for Phase One were manufactured by Santa Rosa Stainless Steel (Santa Rosa, CA) and WESTEC (Healdsburg, CA). The tanks are 14½ feet in diameter and 34 feet tall. They were shop-fabricated in northern California and trucked to the site.

Each 5,000-ton capacity phase of the winery includes 32 tanks arranged in four eight-tank rows on concrete pedestals, along with a 30,000 sq. ft. barrel room. In September 1999, exterior building design was begun.

With this winery, form truly does follow function. The height and proportion of the tanks and tank arrangement in the fermentation room dictated the overall building form, requiring a building with a clear height of 38 feet.

To comply with San Luis Obispo County's desire for an agrarian vernacular style for winery design, I chose to play off typical surrounding agricultural buildings. The resulting winery design consists of a series of sheds and towers executed in strong colors to reinforce the massing of the various layers of the structure. Visual layering of the building was critical, because the buildout of the winery will be four times the initial footprint (see cover photo).

The design has produced a crisp, clean, aesthetically pleasing building in bold, strong, fun colors, which give the building a playful, whimsical feel. By late September 1999, we had conceptual approval of the winery masterplan and character sketches. We were ready to proceed with construction.

Fast-track permitting and construction

We had less than 12 months to have the winery ready for the 2000 harvest. Tony Matthews and I decided the only way to be ready for harvest was to

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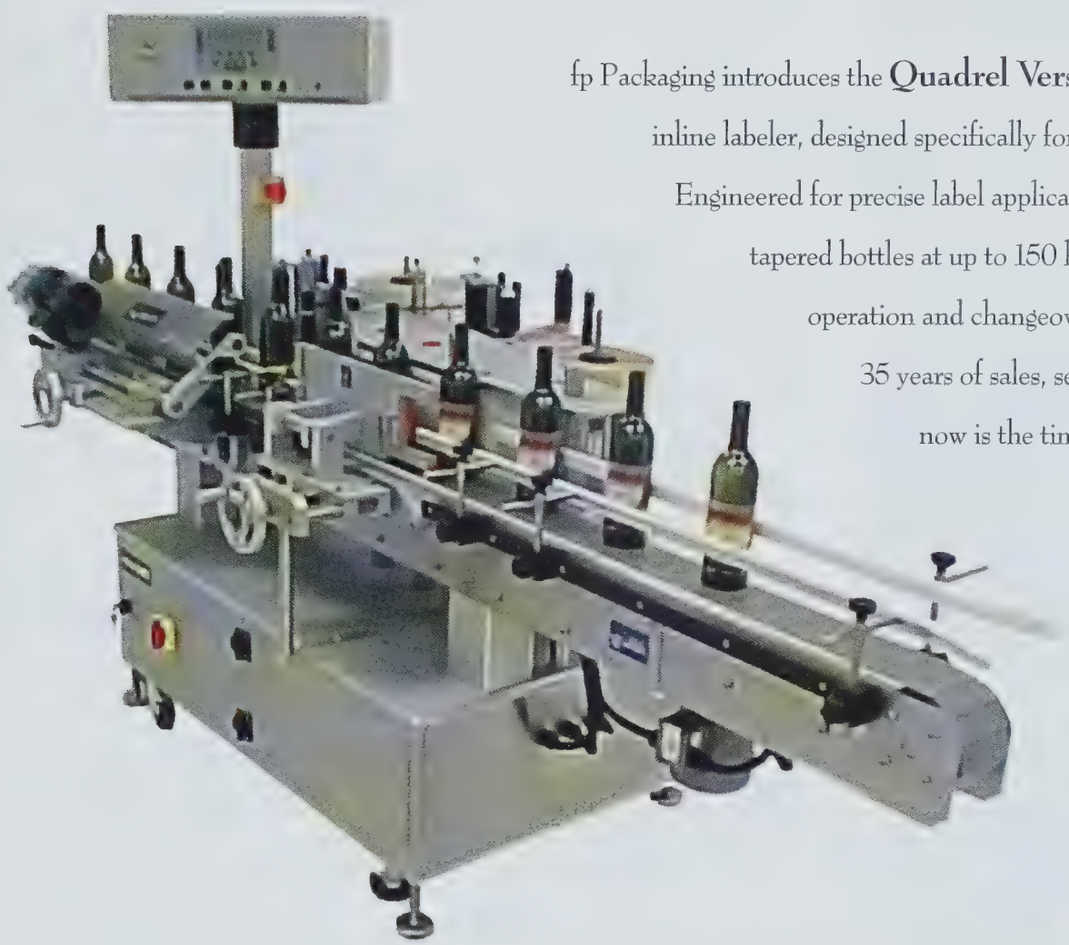

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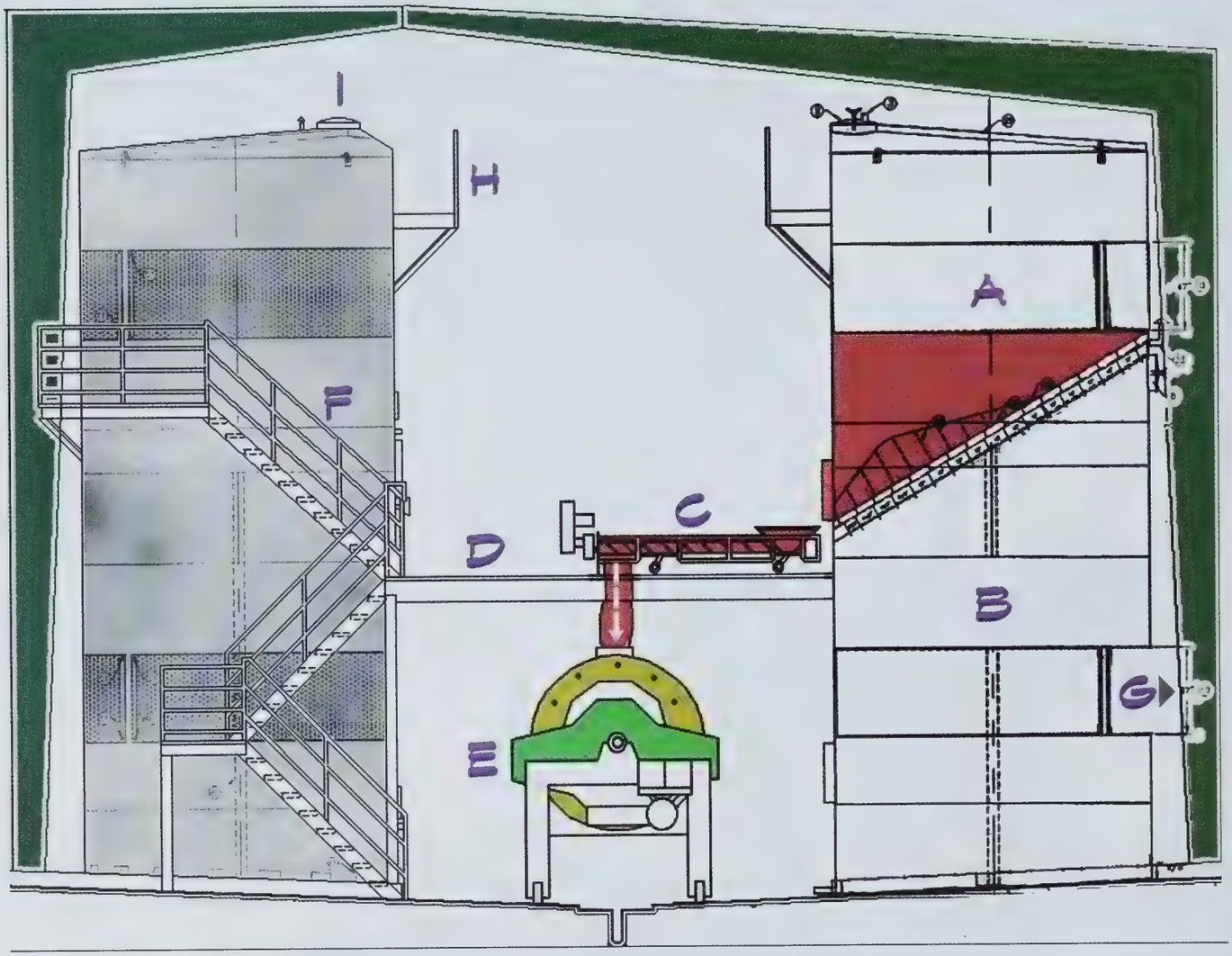

This cross-section of the fermentation bay illustrates the position of the fermentors (A) stacked on top of the storage tanks (B); mobile conveyor (C) on the work platform (D); and the mobile press (E) on rails underneath. The fermentor empties pomace to the press via the mobile conveyor. In addition to the work platform, a catwalk at the back of the tanks (F) provides access to the lower storage tank door (G), and an upper front catwalk (H) provides access to the top opening (I) on the fermentors.

establish a fast-track strategy with the client group, consultants, and permitting agencies. We outlined a phased permit approach with San Luis Obispo County departments of planning and building to achieve this goal. The county truly acted as a partner to make this happen.

The project was broken into five primary phases: Phase I included access road, encroachment permits, and incoming utilities. Phase II consisted of the mass grading. Phase III was underslab utilities, foundations and building slabs, and tanks and catwalk systems.

The tanks would be installed before the building was constructed. Phase IV was the primary winery building shell. Phase V was the interior build-out, winery systems, process wastewater ponds, and grape receiving pad. We established a protocol for permit tracking with the county, which was one of many keys to successful completion of the project. Initial major permits were issued in fall of 1999, and Phase V permits were issued in April 2000.

In addition, we packaged, processed, and received about a dozen minor permits for such items as wells, scales and scale house, pump houses, and septic systems.

The construction side of the project was a joint venture effort between the Fetzer's facilities division and Rarig Construction (San Luis Obispo, CA). Rarig acted as prime contractor for portions of the project, and Fetzer managed and implemented other portions. Rarig Construction's project management team and its in-house crew of concrete and building systems were a perfect match with Fetzer, which typically "self-performs" major portions of its construction projects. Rarig also provided access to local sub-

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Design team

In addition to its participation in the initial masterplanning of the winery, Summit Engineering provided civil and structural engineering consulting, including process wastewater design, septic system design, and complete site civil and structural engineering consulting, including grape receiving pad design.

Arthur Engineering (Livermore, CA), provided electrical engineering, utility company coordination, and process controls design. IRRAP (Healdsburg, CA) was responsible for initial refrigeration design and technical support for both the concept of natural gas refrigeration and for related equipment procurement.

Brummel-Myrick & Associates (San Luis Obispo, CA) provided the HVAC space conditioning engineering and plumbing design for administrative support and production areas. Oasis Associates, Landscape Architects (San Luis Obispo, CA), provided landscape and site design assistance.

This design team rallied around the phased approach to documents and permits and around the E3 philosophy, which served as the basis for design decisions.

Green building approach

Fetzer challenged the design team to look beyond status quo technologies in design of the winery, to identify and use sustainable materials, green building materials, energy efficiency, life cycle costing, and renew/reuse concepts.

Other components of the challenge included indirect green building concepts, such as trucking distances for materials, reducing material waste, and appropriate selection of equipment for efficiency. All members of the design team were instructed to consider these concepts in their work, and the results were significant.

Initial testing of the *insitu* soils materials revealed that the on-site sources were ideal for construction of roads and structural pads for the project. Fetzer installed an on-site rock-screening plant and created all of the baserock material for the project. This saved thousands of man hours, thousands of gallons of fuel, and thousands of dollars. It also eliminated significant emissions from trucking and off-site equipment.

The fermentation building has been placed to the south of the barrel room. Because it is much taller, it effectively shades the barrel room during a significant portion of the day, reducing barrel room cooling loads. The barrel room envelope, with API urethane wall panels and batt-insulated roof assembly, has a very efficient R-value of well above R30. Although not green materials per se, they provide long-term energy savings and life-cycle cost efficiencies and also increase speed of construction.

Fermentation rooms were designed to maximize natural lighting to reduce the need for artificial light. Barrel and tank rooms have night-cooling systems to further reduce energy demand.

Winery systems are a significant part of the E3 approach to the winery. The winery hot water system is a good example. The Quick Water system implemented in the winery is a 99%+ efficient, direct contact water heating system. The system is considered one of the most efficient heaters in the industry, requiring up to 40% less fuel than comparable models. In addition, its emissions are again among the lowest in the industry. Stack temperatures are only a few degrees above the water temperature. Finally, the direct contact heating of water virtually eliminates the need for treating incoming water, which reduces water demand significantly and reduces wastewater pond load.

The largest energy demand in any winery is the refrigeration system. Again E3 concepts guided design. Matthews led the research effort to look for alternatives to the status quo. The solution was a natural gas system for all of the winery's refrigeration needs. These units are far more efficient than electrically driven systems.

Power is generated at the point of demand, virtually eliminating line and transmission losses.

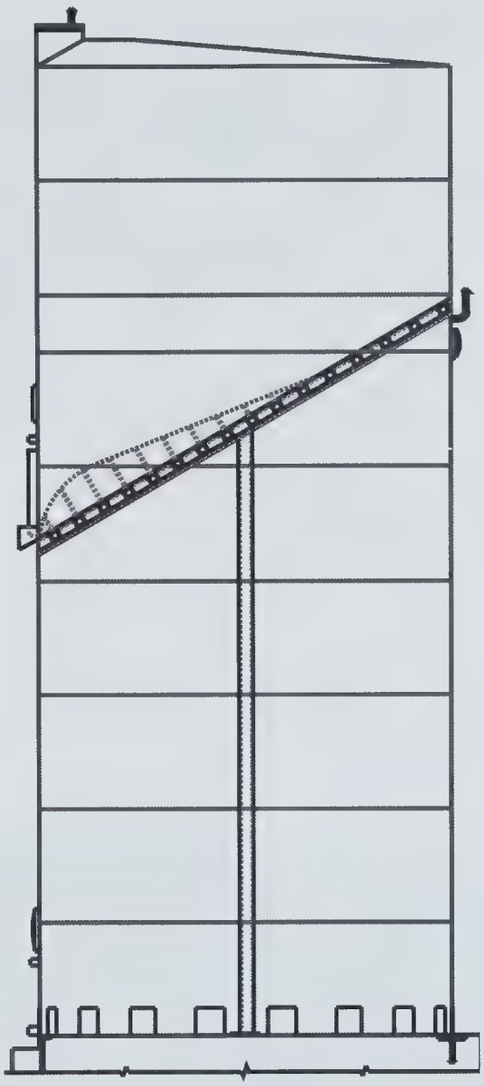
The system includes two renewed/reused 125 horsepower refrigeration units and recyled evaporative condensers. Fetzer benefitted from huge cost savings, as well as the satisfaction that formerly scuttled equipment was refurbished and again put to use. Renew/reuse concepts were also implemented in purchasing in other areas, including a fog system, tanks, and other equipment.

Reclaimed water will be recycled for on-site agricultural use, landscape irrigation, and to maintain an employee enhancement lake. Landscape choices include locally indigenous, drought-tolerant materials.

Harvest 2000

The true test of a production winery is the harvest. Although, the winery was still in the finishing stages at the beginning of crush, harvest 2000 gave the opportunity to test the results of the collective design decisions. Initial results matched the highest expectations. The winery began receiving fruit on September 23. The crush continued for 48 days. Harvest 2000 totaled 4,659 tons.

The total labor force included winemaker Scott Hawley, an assistant winemaker, and a cellar staff of four. Six additional seasonal workers assisted on a part-time basis. The 50-ton fermentors allowed flawless product movement. Pomace removal was accomplished without workers entering tanks, and the winery did not resort to sluicing at any time.



In this tank-on-tank design, the fermentor sits on top of a storage tank. The upper tank has a structural floor that is supported by a center column and the lower storage tank shell (wall). Seismic resistance is enhanced by the thicker lower tank wall which resists elephant-foot buckling and provides solid attachment for the numerous tie-downs between the tank and the tank pad/footing.

Pomace removal from fully-drained fermentors averaged about one-half hour. Some fermentors emptied in 20 minutes. The two portable shaftless screw conveyors used in harvest 2000 were heavier than hoped, but functioned superbly to deliver pomace to the press. Fetzer was the first U.S. winery to install shaftless screw conveyors for this purpose. Another shaftless conveyor removes pomace from the press area to the pomace-removal bin.

"The shaftless conveyor eliminated hanger bearings and a lot of moving parts," reports Matthews. "It has a simple design and worked perfectly for us."

Engineers at Martin-Sprocket are working on a lighter-weight conveyor to aid cellar staff in moving and positioning the devices for next harvest. The press on rails concept, allowing the extremely short portable conveyor for pomace delivery, functioned flawlessly also. While we will experiment with festooning systems to manage press utilities more effectively to increase efficiency and safety for future harvests, the concept as a whole appears to be a winner.

Hawley reports that a variety of cap management styles were used. The tank-on-top-of-tank design makes for an easy delestage, simply gravity-fed or pumped juice to the bottom tank and returned to the top of the fermentor through irrigation devices. Stainless steel boxes under elevated screens allowed exposure to air during pump-overs. In-line fittings were designed to create a venturi effect and draw in oxygen during pump-overs.

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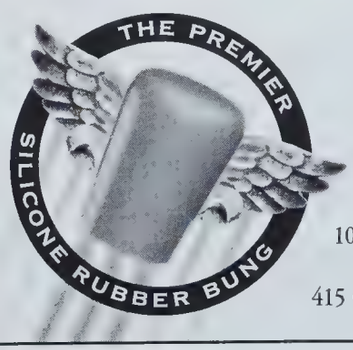

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Cap management style and pump-over programs were based on such factors as maturity and condition of the fruit, herbaceous tendencies, color and flavor extraction and development, in conjunction with the stages and overall health of the fermentation. Pump-overs were done from one to three times per day, moving up to the equivalent liquid volume of the fermentor.

Summary

Using a small labor force, the winery processed almost 5,000 tons of fruit, safely and efficiently in a manner consistent with our guiding E3 concepts and with the direction of Fetzer's management and winemaking divisions.

Winemaker Scott Hawley reports, "I am extremely pleased with the performance of the winery. Without sacrificing quality, we have greatly improved our efficiency and acted responsibly toward the well-being of our team members.

"Through the new winery, we crushed a total of 4,650 tons including: 2,975 tons of Cabernet Sauvignon, 1,350 tons of Merlot, 50 tons of Syrah, 125 tons of Zinfandel, and 150 tons of other blending varietals."

Consultant Paul Smith, after a tour during crush, comments, "From a processing perspective, it is my opinion the Fetzer winery represents the most significant new winery in North America since Opus One (Napa, CA)." Although these two facilities are designed with different goals and objectives, both are the result of questioning the basic needs of the process and both respond to their respective programs.

We firmly believe that winery design, itself, is one of the stylistic tools available to winemakers, and we consider the Fetzer Central Coast Winery to be a total success as a winemaking tool.

Final thoughts

On a final note, I'd like to personally thank Tony Matthews for his contribution to the success of this project. Never in my career have I had the opportunity to work with anyone with more drive, and devotion to his company and its goals than Tony. He has been in this industry for over 30 years, and still approaches each day with unbelievable enthusiasm.

During the two years Tony and I worked together, he acted as project manager, contractor, owner's representative, and cheerleader for the project. His effort and unwavering devotion to the goals of the Fetzer Central Coast Winery were, in my opinion, the key to its success. Congratulations and thanks are also due the entire Fetzer organization whose commitment to the e3 concepts and willingness to think outside the box enabled this project. ■

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PART I

Impact of TMDLs on California viticulture

BY Lizanne Wheeler & Patrick Brown
Vineyard Water Systems

With all the current attention on GWSS, PD, GPS, IPM, and GMOs, few of us involved in California viticulture can get excited about another acronymic threat to our ability to farm. Yet many vineyard owners may view the Total Maximum Daily Load (TMDL) process as just that.

To clarify the many issues and impacts of regulations regarding nonpoint source pollution from agricultural operations on California viticulture, *PWV* is featuring this first in a series of articles on the topic. The second part of the series will review the TMDL process in the Monterey Bay watershed.

Natural history of the beast

In 1972, Congress overrode President Nixon's veto to pass the Clean Water Act. The new law directed the U.S. Environmental Protection Agency (EPA) to regulate pollution entering the nation's waterways. The act identified two basic sources of pollution: point source pollution, which enters the waterways through definable pipes and conduits, such as industrial plant waste streams or municipal sewage outfalls, and; nonpoint source pollution, which enters the waterways in a non-discrete manner, such as natural soil erosion, agricultural run-off, and through storm drains.

When developing the Clean Water Act 30 years ago, Congress decided that cleaning up the point source pollution was the most reasonable first step in addressing the issue of pollution in the nation's waterways. The Clean Water Act established a waste discharge permit system to regulate point source pollution. This permit system phased in a technology-based solution to the nation's most obvious and easily identifiable pollution streams so that, by 1983, control levels were to be achieved based on the "the best available (and economically viable) technology."

At an enormous cost to industry and taxpayers (Congress eventually spent $40 billion for the construction of municipal wastewater treatment plants), point source pollution effluents in the U.S. are now largely under control. Even in light of compliance costs, few people today argue the validity and success of this portion of the Clean Water Act.

In 1972, Congress called for every state to establish water quality standards for all navigable rivers and waterways. It was hoped that the rivers would meet these standards once point source clean-up was implemented.

If not, the state was to add the waterway to its list of "impaired waterways," after specifying the pollutants. The state would then calculate how much of the specific pollutant the waterway could tolerate and still meet its water quality standard. This figure would be expressed as the Total Maximum Daily Load (TMDL). To complete the process, the state would also identify all of the sources (both point and nonpoint) of the pollutant, allocate the calculated load among the point and nonpoint sources, and develop an action plan to bring the waterway into compliance.

Thirty years after passage of The Clean Water Act, we are now seeing a significant shift from technology-driven pollution control to water quality standards-driven control. The regulatory measure of compliance shifts its focus from point-by-point waste discharges to the physical monitoring of the entire watershed, comparing the results to the water quality standard established for that watershed. This is a more mature, holistic, and significantly different approach than the nation has taken for the past 30 years.

Does the beast have teeth?

Under the Clean Water Act, the EPA has authority to regulate point source pollution through its permit system. In many states, this point source permit process has been contractually delegated to state agencies. In California, for example, the point source permits are issued through the State Water Resources Control Board.

The EPA has no authority to regulate nonpoint source pollution. Congress expected the states to implement action plans that brought the waterways into compliance. It was hoped that these plans would be voluntary, with agriculture, forestry, grazing interests, and public lands utilizing "best management practices" to reduce the total pollutant load to meet the standards. It is the role of the EPA to step in if a state is unable (or unwilling) to achieve compliance with the water quality standards.

A component of the TMDL process is the allocation of the waste load among the point and nonpoint sources. The implications here make all stakeholders nervous. Point Source Permit holders worry that their waste load allocations will be further reduced. Nonpoint contributors fear more regulations, permits, and costly compliance requirements.

State regulatory agencies face the enormous tasks of setting water quality standards, monitoring water quality, and developing TMDLs on a tight time schedule with little or no funding to perform these tasks. To round out the party, fishing interests and environmentally conscious groups are watchdogging this process, buoyed by a successful series of federal court cases.

Regional Water Resources Control Boards have the authority and the responsibility to ensure that appropriate management measures are implemented to bring the state's waterways into compliance with water quality standards. With regard to the nonpoint pollution sources, they prefer an approach in which landowners voluntarily implement effective measures to reduce nonpoint discharges. Only if this approach proves insufficient would they rely on regulatory action.

However, the state is mandated to provide the EPA "reasonable assurance" that these management plans are working (and thereby keep federal grant dollars flowing into the state), therefore the regional water resources control boards

must establish performance measures that benchmark success of the plan.

Where is the beast now?

The EPA approved California's list of "impaired waterways" and priorities to develop TMDLs in May 1999. This is referred to as the "303(d) List" after the section of the Clean Water Act that mandates it. As funding becomes available, California will be determining the individual TMDLs according to that list. This presents all nonpoint stakeholders with a unique window of opportunity.

In order to implement the TMDL for a given watershed, a monitoring program must be established to identify the current waste load and its sources. If, for example, sediment is the pollutant in question, the landowners in a given watershed could potentially reduce the sediment load input through land management practices to the point where the watershed or a tributary to the watershed meets the water quality standards, thus avoiding a TMDL listing altogether.

If, on the other hand, the landowners choose not to address the issue of their contribution to the total load of sediments in the watershed, the river may eventually find itself on the 303(d) "Impaired" list, triggering the TMDL process.

In either case the outcome is the same: landowners will reduce their nonpoint sediment discharges through appropriate land management practices to comply with water quality standards established by the state for their particular watershed.

Living with the beast

First of all we need to remind ourselves that we are in the midst of a "rite of passage." The old rules no longer apply. A new paradigm has met us on the other side of the threshold. We are no longer talking about "his effluent," "their sewer," "your ranch," and "my farm." That is all part of the old technology-based point source approach we have been living with for 30 years.

The new dialogue revolves around a holistic, inclusive adjective: "our" watershed, "our" river, "our" erosion challenges, "our" nitrate loading, "our" mining wastes, and "our" diazinon in the city storm drains. It belongs to all of us. It's not his problem, your fault, or their responsibility anymore. It's ours.

In order to successfully meet the objectives of the Clean Water Act and ensure that all our waterways are approaching the water quality standards we set in our own states, we need to work together. We need to consider the entire drainage basin as a whole, along with economic and beneficial uses in each tributary, and their impacts on overall water quality.

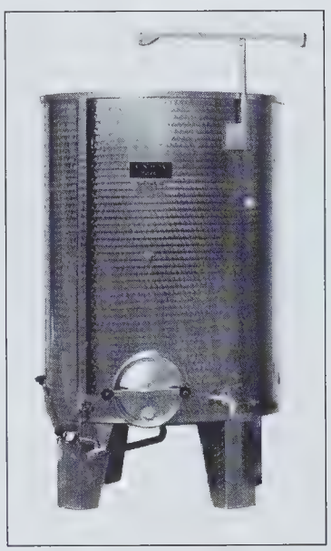
Viticulture is a huge industry with a multi-billion dollar impact on the economy and water use in California. We have already made tremendous strides in addressing issues of the Clean Water

What is the point?

The California State Water Resources Control Board has authority under the 1969 California Porter-Cologne Act to regulate all discharges into waterways in the state, making no distinction between point and nonpoint sources. Anyone discharging or intending to discharge a waste into the waters of the state is required to obtain and comply with a Waste Discharge Requirement issued by one of the nine Regional Water Resources Control Boards.

A Point Source Waste Discharge Requirement complies with the EPA permit process. Nonpoint source discharges were specifically addressed by the California 1988 Nonpoint Source Management Plan, which established a three-tier approach that the Regional Water Resources Control Boards are to employ to reduce nonpoint discharges:

- Voluntary implementation of best management practices;
- Regulatory-based encouragement of best management practices;
- Effluent requirements.



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We need to document and track the impacts of these practices. In order to comply with the standards of this era, we need to prevent the loss of our topsoil, fertilizers, and farm chemicals into the waterways. It only makes sense to work toward that goal. We have a window of opportunity to significantly modify the impact of the TMDL process. We can do that by:

- Increasing our awareness of where our runoff goes and what it carries with it.
- Stepping up our pace in addressing the issues of runoff from our vineyards.
- Supporting local groups such as the Farm Bureau's agricultural effort to address issues on a basin-wide management plan.
- Become more familiar with the challenges of all nonpoint runoff in the watershed, including other agricultural commodities, communities, county roads, and open land.
- Sharing successful practices with our neighbors. We need to broaden our definition of "our neighbors" to include all landholders in our watershed: vineyards, grazing interests, open space, cities, and towns.

This next level of water management requires the participation of everyone because everyone is a stakeholder. Our industry, because of its size and visibility, is in a unique position to take the lead in demonstrating agriculture's commitment to sound land management practice while improving the environment and quality of life for all Californians. ■

References

The authors relied heavily upon and suggest the following documents for further reading:

"TMDLs, The Revolution in Water Quality Regulation," Jennifer Ruffolo, California Research Bureau CRB-99-005, April 1999.

EPA Region 9: TMDL Program, *http://www.epa.gov/region09/water/tmdl/*

1998 California 303(d) List and TMDL Priority Schedule, US EPA 12-May-1999.

EPA Region 9: California Water Quality Planning Projects, *http://www.epa.gov/region09/water/projects/index.html*

MBNMS Action Plan IV: Agricultural & Rural Lands, *http://bonita.mbnms.nos.noaa.gov/Resourcepro/reports/AgactionIV_99/index.html*

Pronsolino et al v. US EPA (Garcia River California) Decision, US District Court No. C 99-01828 WHA, March 30, 2000.

Lizanne E. Wheeler and Patrick D. Brown are independent irrigation design consultants specializing in developing water management programs and bilingual management training for micro-irrigation systems. They may be contacted through Vineyard Water Systems, 521 Lucerne Road, Cayucos, CA 93430, 805/995-0587. Reprints of their recent publications are available at www.vineyardwater.com

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Wine Quality **continued from page 28**

John's dreaded black spot," says Morgan. "The rating game works well for a wine that hits 90 points or more. But what about the many wonderful wines that slip into the high or mid-80s?

"A virtual wine merchant may have difficulty selling wines with low ratings. Will e-customers clamoring for 90-plus point wines eschew those rated in the 80s? The dot-coms must address this issue, for the consuming public (and especially American consumers) have demonstrated that they love the upper end of the 100-point scale."

Will winegrowers dominate future?

Napa Valley winegrower Andy Beckstoffer (who owns approximately 1,000 acres of vineyards in Napa Valley and sells grapes to many of the top Cabernet Sauvignon producers in the viticultural area) discusses the management strategy of the winegrower and some of his own models for outstanding grape quality.

"An appreciation of the importance of the winegrower, present or future, must first take into account what type of wine we are attempting to produce. Our purpose is not to produce flavored Wonder Bread, the perfect wine, a Ken or Barbie doll, a classic wine without imperfections originated in the vineyard and manipulated, manufactured to perfection in the winery.

"Our goal is to produce a fit beauty with a chipped tooth whose charm is in the way she carries her defects; a wine that harmoniously expresses the individual characters of a unique *terroir*," Beckstoffer says. "These are luxury goods where individual personality and sense of place take us to the next level. As with all luxury goods, the special materials of construction, and the individual skills of the craftsman come together to speak of culture, history, and sense of place of origin.

"The winegrower's contribution will fall into two categories: *terroir* and attitude. *Terroir* is defined as the total of all the physical aspects of a site as adopted by the winegrower. Attitude is the total of all psychological, spiritual aspects of the vineyardist's thought.

"If we were to list the important ingredients in the modern rise in Napa Valley grape and wine quality, one major factor would be the improved, full-season communication between winemaker and winegrower. This collaboration has been pivotal in a rapidly changing and uncertain vineyard technology.

"A major hallmark of this association has been a new respect for the vineyard manager's contribution and an appreciation for the talents and expertise of these highly-trained vineyardists who are in the field daily.

"Winemakers have come to realize that the vineyardist is as interested as they are in producing extraordinary grapes. Perhaps winemakers now are more fully appreciative of the contribution that can be made by the vineyardist, who possesses the technical competence to bring about the full expression of a classic site. In the end, we are all in this together.

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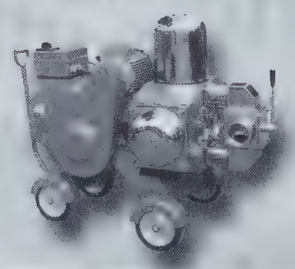
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"Can Napa Valley consistently produce Cabernet Sauvignon wine of top global significance?" Beckstoffer asked. "Yes! At least that is a reasonable and worthy goal and one that could be accomplished in the early part of the 21st Century by people now working with planted vineyards. It is a goal for our generation!

"In Napa Valley, we share the unique soils and Mediterranean climate required to produce wines similar to several other areas of the world. Our extraordinary and key facility is modern vineyard technology and the ability to fully utilize it. Like any other viticultural area in the U.S. with true *terroir* potential, Napa Valley is free from any historical precedent or appellation or governmental restrictions to experiment and use the most modern vineyard practices. This is our ace in the hole!

"We must push the envelope of technical advancement. In this, we are as much entrepreneurs as farmers in that we must have a plan and a vision to take risks and make decisions in the face of uncertainty."

The adage that "The wine is made in the vineyard" is true, and the winegrower and winemaker's relationship has changed, according to Beckstoffer: "Our wine quality goals cannot be accomplished unless the vineyard operation (whether winery-owned or independent) can afford it economically.

"Winery-owned vineyards cannot be considered cost centers while the winery itself is seen as a profit center. Revenues must be properly allocated to the vineyard. If the vineyard is to get the required management focus and investment, the vineyard manager cannot be an expensive but necessary evil while the winemaker is the profit maker and media star.

"This proper allocation of revenue requires that the price of grapes be tied to the value of the bottled wine, commensurate with the contribution of the grapes to wine quality. Wines of quality cannot be priced at market value while grapes are valued by a commodity index reflecting, in good part, crop size.

"The market performance of Napa Valley Cabernet Sauvignon is in large part due to the efforts and collaboration between winegrower and winemaker. In summary, Napa Valley Cabernet Sauvignon wine is possibly being made at the highest level with a great deal due to the application of modern, sustainable vineyard practices that have emerged over the last decade. These wines will be harmonious expressions of the balanced and adopted *terroir* of particular vineyard sites.

"The winegrower working in collaboration with and respect for the winemaker must make an important contribution. The effort must be sustainable in that it is economical for all parties, environmentally sensitive in its vineyard practices, and socially responsible to farm workers, neighbors, and wine consumers." ■

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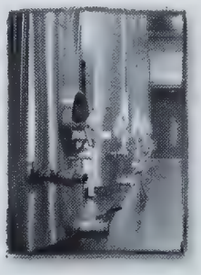

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VARIETAL REVIEW

CHALLENGING AND ENIGMATIC

Roussanne gains California enthusiasts

BY Eleanor & Ray Heald
Contributing editors

Roussanne's intriguing mineral, spiced tea, and citrus zest flavors, forthright breadth and depth, and delicate low acid have captivated French growers and vintners for centuries, despite its problems. Growers battle botrytis-sensitive, tight-clustered, fleshy grapes with medium-heavy skins that are plagued with uneven ripening and inconsistent vintages.

In the northern Rhône Valley more than 100 years ago, Roussanne was known as white Hermitage. Though low in acid, it was valued for ageing better than red Hermitage (Syrah).

Roussanne is one of only two white grapes allowed by law in the appellations of Hermitage, Crozes-Hermitage, and St.-Joseph and is the only white grape allowed in St.-Péray. In the southern Rhône, Rousanne is one of just four white varieties allowed for production of Châteauneuf-du-Pape Blanc.

Growers and vintners in California have begun to unlock the secrets of this engaging grape. In this exclusive review, *PWV* explores the issues of enigmatic Roussanne with California producers and Pierre Perrin from Chateau de Beaucastel and Domaines Perrin in the southern Rhône Valley, France. His family's interest in propagating and growing certified Beaucastel Roussanne budwood at Tablas Creek Vineyard in Paso Robles, CA, has helped fuel interest in a deeper understanding of this grape.

What is Roussanne like?

Producers agree that honeysuckle and orange rind describe the aroma of some California-grown Roussanne. Aren't these descriptors for Viognier? Bob Lindquist (Qupé Winery), says they are, but more restrained in Roussanne. Viognier, therefore, can be quite complementary as a blending varietal.

In relatively neutral barrels, Wild Horse winemaker Jon Priest notes interesting clove and nutmeg characters that are not as evident in the bottled wine.

Leon Sobon (Sobon Estate) stresses Roussanne's floral aroma component and says it's mildly honeysuckle in wines from his Amador County estate and more reminiscent of wildflowers and clover.

John Alban (Alban Vineyards) finds his clonal selection of Roussanne very neutral in the vineyard. Initially, fermenting must has spice and qualities more associated with typical grape skins, as opposed to a varietal component. Early on and much like Chardonnay, floral notes and fruit aromas are the result of yeast-prompted fermentation bouquet.

With time, Roussanne develops profound flavors which Alban places in the "rich" category of hazelnuts and honey as opposed to fruity and floral. It takes on spicy notes, much like graham crackers, more than clove or other brown spices.

Lacking predictability, in some vintages, such as 1995, a charred smokiness associated with the creosote of heavy-toast barrels is evident. "If you dig deeply enough, there's a floral component to Roussanne, but it's like trying to find the world's shortest giraffe. It's not the essence of this grape" Alban quips.

When young, Alban Roussanne is more minerally and nut-like. After four years of bottle age, it takes on acacia flower notes. A characteristic with which Beaucastel's Pierre Perrin agrees.

Core flavor impact

Craig Jaffurs (Jaffurs Wine Cellars) says two elements affect core flavors and stylistic impressions of California-grown Roussanne: botrytis sensitivity and ripeness levels. Floral, honey, acacia, and papaya qualities characterize the harvest of riper fruit from a warmer climate. In addition, mineral and wet stone indicate harvest of less ripe grapes.

When principal harvest parameters (see table) for producers are evaluated and compared to the tasting notes published at the end of this text, they support Jaffurs' analysis.

Comparison of Roussanne harvest parameters

Producer	°Brix	TA	pH
Alban	NA	<1.0	>3.0
Jaffurs	23	0.60	3.3
Qupé	24–25	0.85–1.0	3.1–3.3
Sobon	22–25	0.5–0.6	3.7–3.8
Tablas Creek	25	0.6	3.5
Wild Horse	24	0.7	3.3

Perrin confirms similar problems in Châteauneuf-du-Pape.

Neil Collins (Tablas Creek) maintains that his Roussanne leans to the more mineral, flinty aspects of the variety. It has flo-

PARTICIPATING PRODUCERS:

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Alban Vineyards
Arroyo Grande, CA

Pierre Perrin, technical director
Chateau de Beaucastel & Domaines Perrin, France

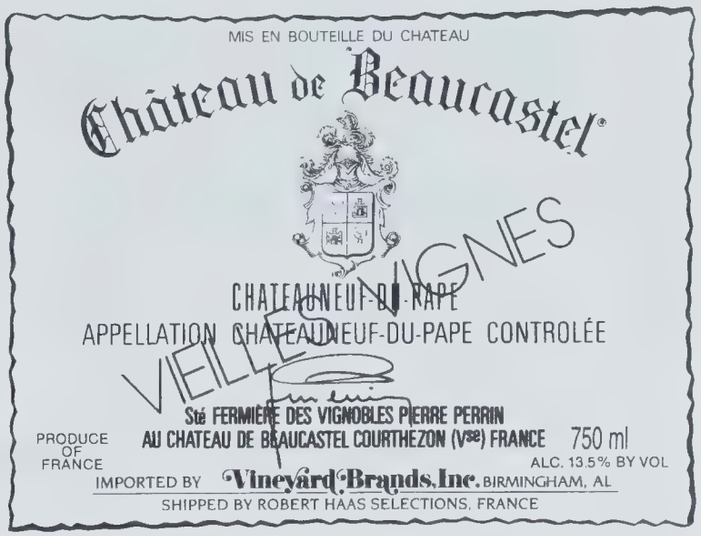
Craig Jaffurs,
proprietor/winemaker
Jaffurs Wine Cellars
Summerland, CA

Bob Lindquist,
proprietor/winemaker
Qupé, Los Olivos, CA

Leon Sobon,
proprietor/winemaker
Sobon Estate, Plymouth, CA

Neil Collins,
viticulturist/cellar master
Tablas Creek Vineyard
Paso Robles, CA

Ken Volk, proprietor,
Jon Priest, winemaker,
Wild Horse Winery
Templeton, CA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ral aspects to some degree, yet it is considerably more viscous than Viognier.

Is this related to soil? Of all producers interviewed, only vines at Tablas Creek and James Berry Vineyards (source for Equus) are planted on calcareous clay over calcareous rock. All other California vineyards are clay loam or sandy loam.

Tablas Creek also has minimal fog influence, and there is no botrytis to speak of. Vineyard soils are extremely dry, and cordons are very low at 24 inches above ground.

"I can only speculate on the impact of these factors," Collins says. "What I do know is that every year, our Roussanne fermentations are very slow, but they do eventually complete."

Rootstocks

Based on soil chemistry at the James Berry Vineyard in Paso Robles (source of Wild Horse Roussanne grapes), multiple root stocks were chosen, principally 3309, 140RU, and 1103P, Ken Volk notes. At the Wild Horse home vineyard, plantings are predominantly 1103P.

James Berry Vineyard selections mirror Tablas Creek choices with the addition of 110R, which was chosen because it was among rootstocks available for the nursery propagation. "At the beginning, there was no knowledge in California about what Roussanne would do on a specific rootstock," Collins indicates. "Based on what we've experienced, I dislike 110R for our vineyard."

Like Tablas Creek, James Berry Vineyard has limestone pockets and 1103P is more lime-tolerant and less vigorous. In areas with less limestone, Collins prefers the more vigorous 140RU because Roussanne, particularly on hillside plantings, exhibits low vigor and struggles.

At Beaucastel, the oldest vines are planted on Riparia Gloire. Younger vines are on 110R.

Growing Roussanne since the late 1980s, Alban has the most California experience. His vines are on 5BB and 3309. Given his current knowledge, he would switch to 101-14 or Riparia Gloire in the areas where there is more loam. For hillsides, he still likes 5BB.

"Today, there's a lot more interest in lower vigor and tighter vine spacing," Alban suggests. "Given that, we've discovered in our vineyard nearly all

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varieties have a better fit with newer trellis systems on 101-14 than 110R."

Jaffurs' Roussanne source is Stolpman Vineyard (Santa Ynez Valley), planted with Alban budwood on 5C rootstock.

Sobon dry-farms Roussanne. Two new blocks were planted over the last several years. Where there is adequate water, he uses 3309, in drier areas, 110R.

"I think we sometimes get mired in rootstock and clonal discussions, but the individual vineyard situation is much more important than scion wood on a given rootstock," Alban contends. "Asking what's the best rootstock is like asking what's the best car? Are you going to be off-road or on-road? Will you be hauling or not?

"The single biggest challenge with Roussanne is uneven ripening. Everything works backwards from that. "If a Brix analysis is run on green grapes and brown grapes on the same cluster, there is at least a 2º Brix difference and often more, even to the extreme of 16º versus 24º."

Vine management

At Beaucastel, centuries of experience have taught that head-trained, Goblet-pruned Roussanne is best. This is very different from growing vines on a trellis.

At Tablas Creek, a basic double cordon with vertical shoot positioning (VSP) was chosen. Leaves are pulled to allow better sunlight penetration, but there is still some uneven ripening. The danger of pulling leaves on the west side is that

heat spells (112ºF for three days) can burn the fruit beyond repair.

Alban's climate, with morning fog in the Edna Valley, is significantly different from Tablas Creek just 30 miles away in Paso Robles. He finds that more extreme leaf pulling balances the grapes. Where leaves are not pulled, there's tremendous botrytis pressure.

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The grapes that are exposed to the sun are botrytized less than those that are shaded, and exposed grapes at 30º Brix hang next to shaded grapes at 12º Brix.

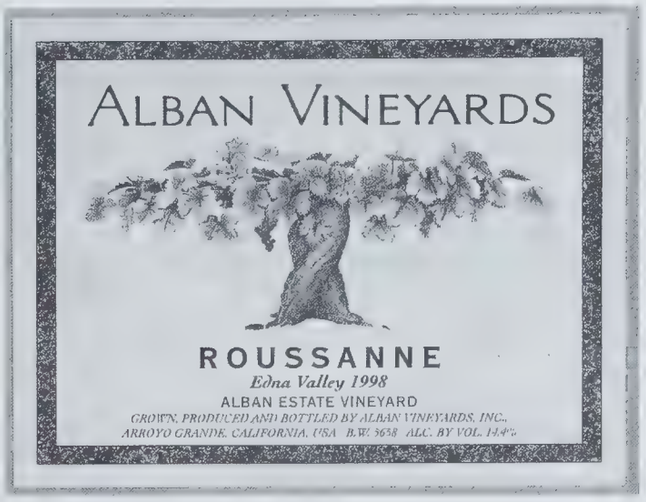
In general, the other producers have chosen VSP with either a cane or cordon trellis. Stolpman Vineyards (Jaffurs' grower) utilizes moveable catch wires.

Sobon has one acre of newer plantings on lyre and two acres on bilateral cordon. Older plantings are on quadrilateral cordon, which he does not recommend. Regardless of training and trellising, he has trouble ripening Roussanne to 23º Brix in most years.

Vine virus is evident, but Sobon is unsure how much of it comes from the scion wood obtained from Alban Vineyards and how much was latent in the rootstock. "Some years, we pick at Thanksgiving with sugars at only 22.5º Brix. This is eight and sometimes 10 weeks after Viognier."

At Alban Vineyards, Roussanne is picked four to six weeks later than Viognier.

Volk explains that the Wild Horse home vineyard was originally laid out to accommodate a lyre system for Roussanne. After two years, it was realized that there was insufficient vigor to go to a quad system, and the trellis has been converted to a three-wire system. Plans are to retrofit again to a quasi Smart-Dyson on a bilateral cordon with spurs oriented both up and down.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"We're looking for more separation in the canopy for indirect sunlight and clusters set on and off from each other," Volk adds.

At Beaucastel, Viognier is picked about September 8. Young-vine Roussanne at 25 hl/ha (1.7 tons/acre) is harvested about one week later, followed by the old vines at slightly over one ton/acre (TPA) in five to six days. "On the old vines, there are fewer clusters and much smaller berries," Perrin explains.

While Perrin is the first to suggest that there is minimal translation between French methods and those practiced in California, Alban points to

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a significant factor. With old Beaucastel vines, there's the combination of ripening much lower yields and on pure Riparia, one of the earliest ripening rootstocks.

Then again it may be the clone. The certified Beaucastel budwood is named the Tablas A clone. At Tablas Creek, it ripens in late September, three to four weeks after Viognier.

"The ultimate goal eventually is for Tablas Creek to be dry-farmed, but we've experienced that young Roussanne likes wetter feet," Collins adds. "This may be the root cause of extremely late ripening on dry-farmed land at Sobon."

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Irrigation at James Berry Vineyard is basically two or three 10-hour sets early in the season, explains Priest. At veraison, it is cut off, creating deficit irrigation through to harvest.

Yields

Alban notes two problems with Roussanne yields. In some years, only a few clusters are formed. In years with a potentially good crop (1997 for example), 3.5 TPA were left hanging and the vines could not ripen this crop load.

Beyond the concept of yield and quality, it appears that Roussanne vines will not ripen a large crop in a cool climate. Crop optimum at Alban Vineyards is about 1.5 TPA, at Sobon less than 2 TPA, elsewhere depends on vintage variability.

Another related element is the climate where Roussanne is grown. The vine can ripen larger yields in warmer climates.

At Beaucastel, the average yield for all white grapes is about 24 hl/ha (1.6 TPA).

Harvest parameters

Taste is not a potential Roussanne harvest parameter for Alban. "I look for as few emerald green clusters as possible," he says. "When the vine reaches a reasonable level on that, we pick and drop the greenest clusters, or leave them hanging and make more than one pass in the vineyard.

"The only numbers I follow are acidity. Ideally, I want the TA under 1.0 and the pH over 3.0. We don't achieve this every year. I consider it a perfect world when the pH is over 3.1.

Since Qupé's source is Alban Roussanne, Lindquist agrees on the best scenario harvest parameters.

Sobon simply lets Roussanne hang until the last possible minute. The vines are stressed with very little photosynthetic activity. "Even under these conditions, the grapes do not stop ripening, albeit slowly," he indicates. "If they did stop, I'd pick immediately.

"Aside from ripening with sugars at 22º or 23º Brix, the TA is very low, sometimes at 0.50, and pH is 3.8. The positive is that the grapes are ambered and flavors are good, not zingy like Viognier, but varietally correct."

Is ambering a requisite to good Roussanne flavor? "Not sunburned brown," Sobon answers.

"We like to harvest Roussanne at Beaucastel around 13.5% potential alco-

hol (approximately 23º Brix)," Perrin advises. "Looking at the grapes, one can tell it's time to harvest. Clusters are slightly brown with berries beginning to dehydrate and soften.

"The grape name, we believe, comes from *roux* in French. A *'roux'* is a person with red-brown hair. You'd probably call it amber in English. The first indication of Roussanne ripeness is the color of the fruit. We don't mark the acidity especially, because the pH is always between 3.5 and 3.7 and about 0.52 TA."

Jaffurs indicates that those are also the grape conditions by which he judges when to pick. "The berries are not collapsing, but they are puckering," he says.

Pre- and post-fermentation techniques

All California producers and Beaucastel whole-cluster press.

Preferences for first addition of SO_2 to whole clusters or immediately at pressing, range from none to 40 ppm. "With a high pH, it would be pretty scary not to use SO_2," Sobon explains.

Lindquist believes the low pH and high acidity fruit he sources from Alban does not need SO_2, but the winery has strong ML bugs that would take off before the completion of primary fermentation if SO_2 was not added. Therefore at Qupé, 25 to 30 ppm SO_2 is added.

"By the end of primary fermentation, there is essentially no free SO_2 remaining," says Lindquist. "That's what I'm shooting for — no SO_2 — because I want to put the wine through inoculated MLF, but after primary fermentation, which is especially difficult with Roussanne."

Priest does not add SO_2 because he prefers juice oxidation. However, he acknowledges the validity of Lindquist's remarks. He, too, does not want the wine to race through MLF and have problems completing primary fermentation, so he may take precautions in the future.

Alban finds that Roussanne turns a darker brown than any other white variety.

"It's better to get the browning done at the juice stage," Volk maintains, "then you don't have to worry about that in the finished wine."

The broad variation in TAs at harvest suggests that wines with high TA values may have as much as 35% malic acid. "We need to put our Roussanne through MLF, or it would be undrinkable," Alban says.

Whether to allow MLF is a stylistic choice for other winemakers with grapes at a lower TA. "That may be," adds Perrin, "but post-MLF, the acidity is low, and at Beaucastel, it can't be corrected. We never worry because we know that, with ageing, a balanced acidity returns. The full evolution of Roussanne still remains part mystery."

Yeasting decisions

With the exception of Tablas Creek and Alban, all winemakers interviewed inoculate for primary fermentation. Are yeast choices based on getting alcoholic fermentation complete or because of aroma and flavor impact?

Most winemakers would prefer not to use Prise de Mousse (PdM), but

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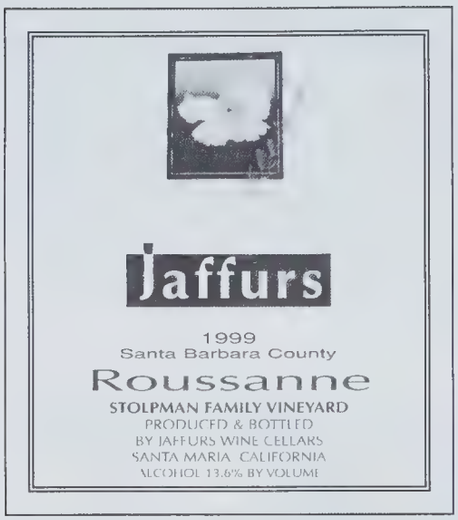


admit to using strains such as Assmanshausen, which while impacting aromas positively, doesn't have the kick to complete.

GRE and Lalvin CY3079 are also suggested. However, CY3079 has difficulty competing for nutrients if MLF kicks in before primary fermentation completes. Addition of nutrients does not seem to help the deficiency at some wineries.

Since 1996, Sobon has added Superfood to boost the yeast but has added no ML nutrients.

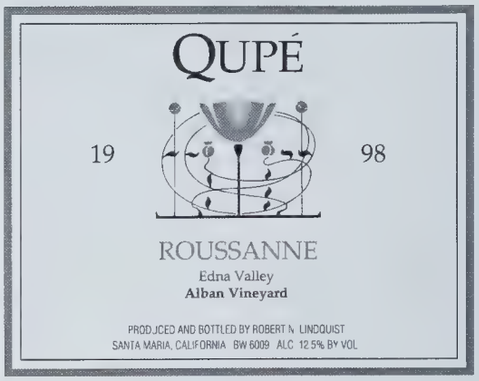
"It is a big problem for us to understand the California experiences with both primary fermentation and MLF for Roussanne," Perrin adds. "Generally, we do not have these difficulties at Beaucastel."

Fermentation, MLF, and lees

Other California winemakers inoculate in tank, and when they observe that the yeast population is increasing, barrel down immediately. These wines undergo full MLF.

Jaffurs, Lindquist, and Sobon inoculate must in barrel. Alban prefers uninoculated fermentation and reports good success.

The producer's choice of barrel age ranges from one to three-year-old neutral, to one-third new French Oak at Tablas Creek. Jaffurs uses one new French oak barrel for every seven neutral barrels filled. "The oak acts as a spice that adds complexity but is not overt.



Lindquist maintains that Roussanne benefits from lees contact where Marsanne does not. "To me, the benefit is similar to Chardonnay," he reports. "That's especially important if there's difficulty getting Roussanne through MLF.

"I don't stir the tank before transferring must to the barrel like we do with Chardonnay, but a significant portion of Roussanne gross solids are transferred from tank to barrel anyway. Unless there's a problem with MLF completing, I don't stir Roussanne lees in the barrel, and I've not had reduction problems, so it stays on the lees for basically a year."

Sobon prefers to put relatively clear juice into one-fill barrels to ferment. All the yeast lees stay in the barrel, stirred occasionally during four to five months before the first racking. About 60% of the final blend undergoes MLF.

At Beaucastel, half the *vieilles vignes* is fermented in stainless steel tanks. The remaining half is transferred to third-fill Burgundy *pièces* (228 liters). The wine remains on yeast lees, stirred monthly in barrel, for about eight months. Even with low acidity problems in warmer years (like 1998), it undergoes full MLF.

Blending varietal options

Château de Beaucastel white Châteauneuf-du-Pape is 100% Roussanne, as are the Roussanne bottlings from Alban and Qupé.

At Tablas Creek, the 1998 blend is half Roussanne, 25% Marsanne, and 25% Viognier. The 1999 blend, however, is 32% Marsanne, 30% Viognier, 7% Grenache Blanc, 28% Roussanne, and 3% Rolle for added complexity.

"Because Roussanne does not grow the same in California as it does in Châteauneuf-du-Pape, from the first vintage, we knew that we could not make

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DNA tests verify some Roussanne is Viognier

BY Eleanor & Ray Heald
Contributing editors

As if problems with understanding enigmatic Roussanne are not enough, California winemakers have also been confronted with misidentified plant material.

St. Amant Winery (Lodi) and Zaca Mesa Winery (Los Olivos) learned that the vines, thought to be Roussanne, planted in their vineyards are actually Viognier.

In response to increased wine industry discussion that some uncertified Roussanne vines in California might actually be Viognier, Zaca Mesa Winery sent selected Roussanne cuttings to Dr. Carole Meredith at the University of California Davis for DNA analysis.

As soon as the proper identification was made and before a formal report was written, Dr. Meredith gave Zaca Mesa Winery verbal confirmation that all the Roussanne samples matched the DNA profile of Viognier.

St. Amant Winery learned that its vines, purchased and planted in 1995, were misidentified when another winery DNA-tested its vines, bought from the same nursery at the same time.

Tim Spencer, owner of St. Amant, also purchased more Roussanne vines from the same nursery in 1996. They were tagged differently than the 1995 purchase, although both carried "Roussanne" as part of the tag wording. The 1996 plantings are true Roussanne.

"When the vines began to bear," Spencer says, "there were obvious differences between the vines purchased in 1995 and those from 1996. Based on the number of planted vines, we calculate that 78% are Viognier. Our plan was to increase our Roussanne program, but instead we are increasing Viognier."

Both wineries acted swiftly when they learned the truth. Remaining current-release product labeled Roussanne and still under winery control was returned to the winery for relabeling. Wholesalers were advised to sell the remaining small inventories of past vintages as labeled.

Spencer's fear is that consumers have been confused and may now think that Roussanne is a very aromatic variety when it is semi-aromatic at best.

The take-home message here is that propagating and planting uncertified plant material is a risk. Industry jokes have been made about "Samsonite clones" (clones imported illegally in a suitcase) for years. When the joke's on you, it no longer seems humorous.

Positive steps to stem losses

Jeffrey Maiken, president of Zaca Mesa, says that both cluster appearance and leaf structure of the misidentified Roussanne are different from Tablas Clone A, which the winery also has planted. "But we thought it might be a different clonal selection," he says.

Zaca Mesa's winemaker notes that between 1994 and 1999, the misidentified Roussanne was picked in the same time frame as Viognier. Walking the rows of fermenting barrels of each, differences were detected. Viognier was heavily perfumed and very floral. The misidentified Roussanne was spicy.

Suspicion about different clonal selections was correct. They weren't Roussanne, however, but Viognier.

"DNA doesn't tell us this," Maiken notes. "But the differences Silver experienced over six vintages do. In harvest 2000, the newly-identified Viognier clone was kept completely separate throughout the winemaking process. It will be the only Viognier Zaca Mesa bottles.

"If consumers liked the former Zaca Mesa Roussanne, they'll like our Viognier. We'll have a challenge in 2002 when our bottling of Tablas A Clone Roussanne (from 12 planted vineyard acres) enters the market.

"Will it be as welcomed as our Viognier? We don't know, but the situation creates an interesting dynamic."

Spencer took another tack. He gave the misidentified Rousanne the fitting proprietary name Mystère and plans to sell it only at the winery.

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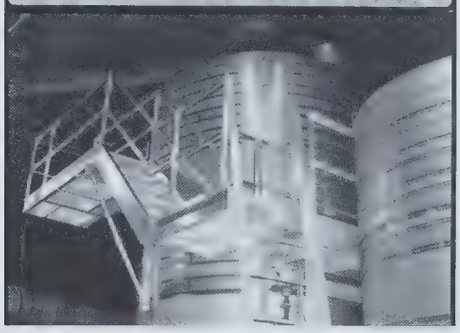

our Tablas Creek wine 100% Roussanne," Perrin explains. "When Roussanne is picked ripe at Tablas Creek, it is too low in acidity and too high in sugar, making a wine with 14.5% to 14.7% alcohol. Marsanne, with its higher acidity and lower alcohol, balances the wine. Percentages of other white varietals serve to enhance complexity."

For aromatics and structure, Wild Horse added 3% Viognier in 1999. Priest is not certain that he will use Viognier in the blend each year, but this particular vintage benefited from a small amount.

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For similar reasons, Jaffurs blends with 4% to 12% Viognier. "However, I find that I need to make careful evaluation in blending trials because Viognier can take over the wine, making it smell and taste like Viognier after a few months in the bottle," Jaffurs comments.

Sobon likes the fruitiness that Viognier contributes to Roussanne and chooses to blend at 10% to 15%.

Wine development

Alban suggests that Roussanne is the one wine on earth that ages backwards. Ignoring fermentation bouquet, which dissipates after about 10 months in barrel, it picks up more fruit.

At Château de Beaucastel, there are young Roussanne vines (40 years old) and *vieilles vignes* (75-year-old vines). In a recent Beaucastel Roussanne vertical tasting, it was discovered that the wines from young vines in vintages 1996–1998 had significant body and glycerol.

"Vintages 1993–1995 appeared somewhat oxidized, but the 1991 was huge and tremendous in the mouth," Perrin details. "This is not unusual because there are three phases in the bottle development of younger Roussanne:

- aromas of acacia flowers, passion fruit, mangos, lychee and honey with glycerol, peaches, and exotic fruit.
- a dumb stage where wine comes across oxidized, tired, and even dead.
- a huge completely different wine — without fruit and honey, but with mineral and acid notes."

Perrin suggests evaluation is not the same for old vines, because the wine has more body from the start and develops differently. He says that the backwards development of younger vines may result from the acid ion (H^+) attached to a glycerol molecule (formed during fermentation) when the wine is young and perceived to be low in acid.

Perhaps with ageing, the chemistry changes. The bond between H^+ and the glycerol molecule breaks, and the wine is perceived to have higher acidity.

"I don't see an obvious, predictable period for my Roussanne yet," Alban reports. "But I do detect wines from some vintages that taste like they are over the hill, where the fruit has fallen out or the wine has fallen apart. Tasting these wines a few years later, I have been shocked at how alive they are again."

Postscript

Roussanne remains perplexing to California winemakers. Their experience, though quite limited, is progressing. Their dedication to the varietal is unquestioned. ■

PWV thanks Wild Horse winery for hosting the discussion/tasting.

BLIND TASTING NOTES

1998 Alban Vineyards Roussanne (100% varietal)

Aroma: spicy, nutty, slight creosote, toasty, smoky, hazelnut, marzipan, Meursault-like, coconut, orange, chocolate, mineral.

Flavors: nuts, spice, smoke, graham cracker, honey, tree bark.

Balance/finish: rich, full, high-side acid, short at first but opens slowly, very complex.

1998 Château de Beaucastel Châteauneuf-du-Pape Blanc Vieilles Vignes (100% Roussanne)

Aroma: mineral, wet stone, smoky, slight oaky notes.

Flavors: mineral, wet paper, coconut, lanolin, very sexy middle, slight vanilla, stone fruits, peach, nectarine, tree blossom.

Balance/finish: elegant, creamy, very nice in the mouth, clean and balanced.

1999 Jaffurs Wine Cellars Roussanne, Stolpman Vineyard (4.5% Viognier)

Aroma: acacia, mineral, honeysuckle, nectarine, tree bark.

Flavors: peach, lanolin, smoky, stone fruits, grapefruit, mineral, honey notes.

Balance/finish: delicate, clean and lean, stylistically different.

1998 Qupé Roussanne, Alban Vineyards (100% varietal)

Aroma: smoky, mineral, toasty oak, slight reduction, hazelnut, graham cracker, Meursault-like.

Flavors: smoky, full, bright acid, lemony, herbal, coconut oil, slightly flinty, nutty.

Balance/finish: needs time, creamy.

1999 Sobon Estate Roussanne, Shenandoah Valley (10% Viognier)

Aroma: peach, sweet fruit, honeysuckle, robustly floral, mineral, slightly Muscaty, slightly green.

Flavors: mineral, peach, nectarine, vanilla, hazelnut.

Balance/finish: creamy, rich, cream soda, long and clean, high-acid finish, slightly bitter.

1998 Tablas Creek Tablas Blanc (25% Marsanne and 25% Viognier)

Aroma: honey, peach, stone fruits, graham cracker, mineral, pumpkin, wet paper, tropical, vanilla.

Flavors: nutmeat, roasted nuts, peaches, cinnamon, some aldehydes, apricot, citrus, mineral.

Balance/finish: long and pure, good balance, pleasant.

1999 Wild Horse Equus Roussanne, Paso Robles (3% Viognier)

Aroma: light vanilla, honey, mineral, lanolin, coconut, nutmeat, new oak hints, floral, tree bark, acacia.

Flavors: rich, full, marshmallow, coconut cream, honey, smoky, nutmeg, peaches.

Balance/finish: crisp, lingering, well-balanced.

PWV thanks Wild Horse Winery for hosting the discussion/tasting and Pierre Perrin for making a special trip from France to share his thinking on Roussanne.

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GSM or GMO?
Gene technology in the wine industry

GSM or GMO? What do these acronyms mean? GSM stands for a wine now common in Australia: a blend of Grenache, Shiraz, and Mourvèdre. GMO stands for genetically modified organisms, the product of new gene technology. I will explain the title of this column below, as I see it encapsulates decisions to be made by the grape and wine industries worldwide in the next decade or so.

Genetic modification of plants is an important issue globally, and its impact is certainly being felt in viticulture. Currently, many different communities are coming to grips with the issue of genetically modified foodstuffs. The debate is particularly acute in Europe. Sadly, among some of the public it has become enmeshed in issues surrounding a general mistrust of governments — some of which goes back to the "Mad Cow disease" meat contamination issue.

In what follows, I want to focus on genetically modified (GM) grapevines, realizing that research is also being carried out for wine yeasts. In my mind, the question we must face in the future is whether or not to plant GM grapevines. There are many issues surrounding this question, not least of which is consumer acceptance of GM derived products, and the attendant labeling laws.

Genetically modified grapevines

I think that most people are familiar with the concept of genetic modification, since it has had so much publicity recently. The "gene jockeys" promise a wonderful future because of their work, some even claiming GM will be the means to end world hunger. In essence, scientists aim to "introduce" useful genes into the DNA of the test plant, thus making it genetically modified. The inserted genes can come from any other organism. For example, genes for disease resistance inserted into Chardonnay grapevines may come from a wide variety of variety of plants, fungi bacteria, or viruses.

There are important spin-offs from this research. DNA studies have led to "genetic fingerprinting" and PCR testing, which is invaluable for the study of many pests and diseases, as well as for variety identification. Similarly, studies at the University of California have shed interesting light on the origin of some varieties, such as Cabernet Sauvignon.

Because of environmental concerns, any genetically modified grapevine must undergo strict testing to ensure there is no environmental risk associated with its cultivation. There must also be stringent tests to ensure that the other characteristics of the vine are not altered, that the vine still performs as it did, and perhaps most importantly, that the resulting wine remains the same. This will involve many, many more years of testing.

There are important questions to be resolved regarding what to call varieties that have undergone genetic modification. For example, can (and should) Chardonnay modified to have powdery mildew tolerance still be called Chardonnay? Particularly since such a new plant will likely be sold at a premium so that biotech companies or research institutions can gather royalties, how will it be distinguished from other Chardonnay plants?

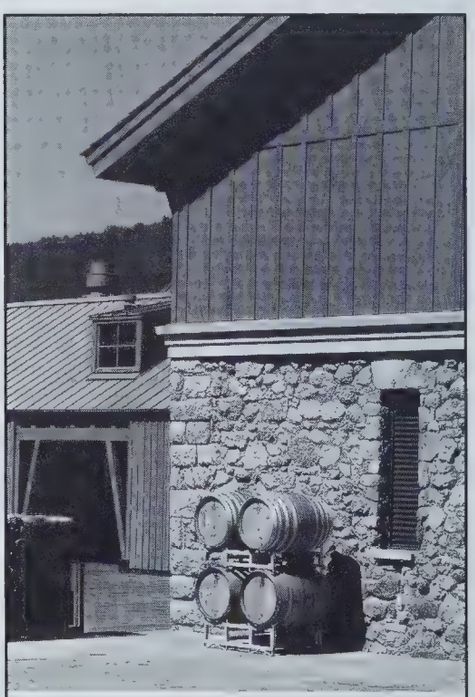
The question takes an almost philosophical turn when we consider it this way: If Chardonnay is genetically modified to become powdery mildew-resistant, is it still Chardonnay, given that susceptibility to powdery mildew is a feature of the variety?

Various contacts in the scientific community have advised me that there is a proposal to declare GM varieties as a new clone. I understand that this proposal has been suggested by the American delegation to the world governing body on grape and wine matters, the OIV (Office International de la Vigne et du Vin). This proposal has apparently been discussed in the technical committee for viticulture, but at the time of writing, I am unable to determine if it has been adopted.

Presuming this proposal is passed by the OIV, would it mean that GM grape varieties would be treated the same as any other clone? If so, it could mean that wine produced from GM grape varieties would not be so labelled. Perhaps that is the reason behind the proposal. Would this, however, amount to deceit of the consumer?

Creating new clones by GM is certainly at odds with traditional processes of clonal selection, especially as carried out in Europe where the processes began. These have been based on selection of superior types, typically from commercial vineyard populations, and then thorough testing of daughter plants for vineyard and winemaking performance.

Clones can differ from one another because of slight modification of genetic compo-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sition by mutation, and/or because of disease agents they might carry, such as viruses or viroids.

Grapevines of a clone are virtually identical because they are vegetatively propagated, with all cuttings from the same mother vine. (There can very occasionally be a mutation.) GM processes, especially where they include genes from a non-grape source, are very different.

I also wonder about the adoption of GM varieties. Would any of you growers out there be tempted to remove an existing Chardonnay vineyard to replant it to a GM Chardonnay clone? Surely one would save on powdery mildew sprays each year, but what is the real cost-saving? Would it pay to remove an existing vineyard, maybe of old vines? What will be the market guarantee for fruit from the new vines? What if there is consumer backlash against wine made from GM varieties? How might that affect the price for grapes?

The case for alternate varieties

I belong to the school of thought which argues for more variety in our grape varieties. Traveling the vineyards of the world, I find it interesting to note the extent to which new vineyards are being planted to fewer and fewer varieties. Take a handful of French varieties, and you describe the majority of modern plantings, in both the Old and New Worlds. These include, of course, Chardonnay, Sauvignon Blanc, Cabernet Sauvignon, Merlot, Syrah, and Pinot Noir. Add in another 10 to 20 varieties to cover minor plantings, such as Semillon, Riesling, Viognier, Marsanne, Petite Verdot, Malbec, Tempranillo, Nebbiolo, Sangiovese, Carmenere, etc., and you have more or less a complete list of New World plantings.

Yet there are somewhere between 5,000 and 10,000 grape varieties available. Are the ones listed above the ones that make the best wine? I think not! They are merely the ones on which the market is currently focused. But will that always be so?

In Australia, for example, there is a renaissance of "old" varieties, such as Grenache and Mourvèdre. When I had a vineyard in the Barossa Valley in the 1970s, I removed some wonderful old vines of Grenache and Syrah because of low production and low grape prices. Now the fruit from such old vine vineyards is very highly sought after, with appropriate prices. How fashions change!

My point is that while the wine market may seem stable, I do think it is a "fashion business," subject to slow — and sometimes not so slow — market trends. An example is the current preference for red wine. Consumers may want "Cab," "Merlot" and perhaps some "Chard" now, but will their children want the same?

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I am always on the lookout for new and interesting varieties, and perhaps will write a future column on some I see as important. Certainly there are many varieties — unknown to many American winemakers and grape growers — that can match "Chard" and "Cab" for quality. I also think we will see "branded" blends like GSM become increasingly popular. This is happening right now in Australia and includes wines being exported. Watch for them in your local wine store.

A future of GSM or GMO?

I am critical of Australian research agencies for investing so heavily in GM research, apparently up to 25% of their budgets. At the same time, there are limited funds available for variety, rootstock, and clonal importation and evaluation. I believe the latter should have the giant share of the research budget. I think it would produce better returns on investment for the industry.

I am unfamiliar with the situation in the U.S. regarding what proportion of funds are being allocated to molecular biology studies. However, my concerns about those allocations should not obscure the fact that much important work needs to be done on issues surrounding genetic modification. I have attempted to raise some of those issues here. Perhaps some readers might feel as I do about the importance of thorough debate on this issue. ■

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by Sue Weeks

Why you should write your own methods and how to do it

Well-written methods are the foundation of good laboratory practice and are as important as the technicians who perform the analysis. A thorough, yet concise, written method can save everyone time and aggravation and can also assure that the analysis is done properly from the outset.

I recommend that you write, and of course, validate (see **PWV** Sept/Oct 2000) your own methods rather than use something straight from the many wine analysis textbooks. Textbook methods are a good start; however, they can not incorporate the operation of a specific instrument or the physical layout of your laboratory.

For someone to follow a method in your laboratory, he or she would need to know how to operate the instrument and where to find all the necessary reagents and peripheral equipment. If this information is not included in the method, the supervisor will be spending time answering questions. In addition, published methods do not always incorporate specific safety information, which may also pose potential problems.

To facilitate this discussion, I've used the method for determining the amount of sulfur dioxide present in a wine sample to illustrate how to write an effective method.

Writing a method

A method should include several sections as listed below, beginning with a general overview (scope) and progressing to more specific work instructions.

1. Scope — The scope briefly describes what the method is used for and the chemical principles of the particular analysis. For example, if you were writing a method for oxidation aeration analysis of sulfur dioxide, you would explain that the free sulfur dioxide is removed from the wine via the aeration of an acidified sample. The released sulfur dioxide is trapped in a hydrogen peroxide solution where it forms sulfuric acid. The acid formed is titrated with a known molarity of sodium hydroxide.

Bound sulfur dioxide is derived from the same procedure but with the addition of heat, which dissociates the bound sulfur dioxide complex. This released sulfur dioxide is trapped and titrated in the same manner. The calculation of total sulfur dioxide can be determined by adding the two resulting fractions. You will be pleased to know that most published methods cover this section of a method quite adequately and can often be used verbatim.

2. Reagents — In this section, list all the reagents required and how they should be prepared. You should also list where the reagents can be found in your laboratory. In a sulfur dioxide analysis, you would list instructions for the preparation of the indicator, the hydrogen peroxide, the orthophosphoric acid, and the sodium hydroxide solution.

You would provide information about where the reagents are stored (*e.g*, 30% hydrogen peroxide is stored in lab fridge on the top shelf) and the relevant safety information (*e.g*. Caution: Avoid contact. Hydrogen peroxide is corrosive). You would also provide information about the standardization of the hydroxide solution including reference to the method and its storage location.

3. Procedure — This section should cover, in exhaustive detail, how to perform the procedure. The more minute the detail, the less you will be interrupted by technicians who are not aware of the specifics. In the sulfur dioxide analysis, you would cover the following points:

- Dispensing 10 ml of the indicator solution into a pear-shaped flask and attaching the flask correctly to the apparatus (a diagram might be useful).
- Volumetric pipetting of 20 ml of wine.
- Dispensing 10 ml of orthophosphoric acid and connecting to the apparatus.
- Ensuring that cold water is flowing through the condenser.
- Turning on the air supply and checking flow rate.
- Aspiration time.
- Expected colour change
- Rinsing and titrating process.
- Recording raw data.
- If bound measurement is to follow, then information about reconnecting the apparatus and boiling the sample should follow, including subsequent recording of raw data.

4. Calculation — At this point, it is necessary to provide information that will convert the recorded raw data into a result that can be easily interpreted. Where any math is involved, it is important to show each step as clearly as possible. If abbreviations are used, a legend explaining them should be included. The required number of significant figures should also be specified.

In the sulfur dioxide example:

Since 1 ml of 0.01 M NaOH is equivalent to 0.32 mg SO_2

SO_2 (mg/L) = V x 16

Where V = titer (ml) for 20 ml of wine sample. The calculation is the same for free, bound, and total SO_2. Express results to the nearest whole number.

Please note that this example is based on 0.01 M of sodium hydroxide, when in reality it may be 0.0095 or 0.0105. This alters the factor by which the raw data is multiplied. It is good practice to stick the current factor to the titrant dispenser, so it is clearly visible to every operator.

5. Quality Assurance — This critical step of the method is often overlooked. The method must address what criteria will be used to determine whether to accept that the results are correct. There are two common ways to validate results.

The first is with a reference standard of a known value, and the second is with the analysis of some samples in duplicate. The reference standard will identify any systematic errors in the analysis. Duplicates will identify drift, provided they are not performed sequentially, and will also, to some extent, detect random errors.

For example, in sulfur dioxide analysis you could accurately prepare an aqueous solution of a known amount of potassium metabisulphite. This would provide a free sulfur dioxide standard. It should be noted that the shelf life of such a standard would be brief (*i.e.* one day or less).

You could also use the standard addition or spike method, adding a known amount of potassium metabisulphite to a wine.

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The sample should be measured both pre- and post-addition. This method is suitable for total sulfur dioxide determination. Another quality assurance check is to analyze a single sample on all apparatus. This could be done on a weekly or even monthly basis to detect discrepancies within each individual apparatus.

If samples are analyzed in duplicate, it is again important to specify criteria for accepting the results. Sulfur dioxide requires a two-step criteria simply because, as an example, specifying 5% as a criteria might be fine in a sample of 100 mg/L or more, but for a result less than 20 mg/L, only an identical result would meet the specifications. In this situation, it would be wise to specify 3 mg/L for results up to 60 mg/L and 5% thereafter.

You will also need to specify criteria for a standard recovery. This could also be a two-step process based on the initial level in the standard and spiked samples.

Please remember that the specifications you establish should be achievable by the laboratory and provide satisfactory accuracy for the winemakers.

6. Miscellaneous — In this section, you may like to include information about spare parts, who to contact in case of equipment failure, suppliers of reagents. This information should also be in one general register, but it is useful if it is referred to in the method.

For sulfur dioxide specifically, you might like to include a drawing of the apparatus complete with measurements and part numbers.

7. References — In the reference section, it is wise to identify the origin of the text that formed the basis of method, so any modifications that might be adopted to suit your laboratory's circumstances can be distinguished from the original method.

Testing your method-writing skills

After you have prepared your method, the best way to test your method-writing skills is to spring it on technicians who are not familiar with the procedure. If they can perform the method without asking any questions, then you have done a great job; however, if they have to ask many questions, it is likely — not that they are particularly slow or unintelligent — but that the method has not been written in unambiguous, easy-to-understand language.

Preparing well-written methods is very difficult to do at first, especially for someone with years of experience performing a method, because it is easy to assume some level of knowledge. It is wise to allow the trainee to provide feedback regarding improvements, so that next time the method will be much more concise. This will lead to more free time for everyone else in the laboratory to accomplish more productive tasks. ■

Next issue: Wine laboratory support groups — Proficiency testing and how to make good use of it.

Sue Weeks is an Australian wine laboratory consultant. She provides assistance in areas of formal or informal quality system implementation, method validation, and troubleshooting, laboratory setup, personnel selection, and staff training. She also operates an Australian/US wine industry exchange program in conjunction with the Communicating for Agricultural Exchange Program (CAEP), in Fergus Falls, MN. She visits America often and can be contacted through the Bibber International website at www.bibber.com.au or by fax at 618/8358-1676. She can also be contacted through Gordon Burns at ETS Laboratories (St. Helena, CA) at tel: 707/963-4806.

by D.R. Storm, PhD. P.E.

FRANCE'S PROVENCE OFFERS UP ANOTHER SURPRISE

Locals had given me fair warning prior to my hikes on the fringes of the rugged limestone escarpments that define the small valley near Beaumont du Ventoux in south central Provence. Wild boar or songlier *are abundant in this region of France, and their reputation for having an ugly personality (particularly as sows are rearing their young) is common knowledge.*

It was strongly suggested by my neighbor, Albert, that, on my hikes, I should carry a stout, pointed staff, much like the hickory shaft that Robin Hood's Little John was alleged to have carried.

Feral pigs (domestic pigs gone wild) in the western U.S. have a reputation for behaving like four-legged rototillers and crop destroyers. Their wild French cousins are no different. Truck gardens, which most Provencals tend with great care, are particularly vulnerable to the rooting habits of the boorish boars.

It is not surprising then, that the songlier *hunting season is looked upon as an opportunity to mete out a measure of revenge against the destructive swine. With the French eye always on the food connection and no apparent legal distinction between commercial and sport harvest of game,* songlier *does appear for a month or two on menus as an entrée special throughout the region. Our* charcouterie *(butcher/deli) of choice proudly displays a hirsute ham that had its origins in the rough outback of the Vaucluse.*

Whatever your personal feelings are about wild game hunting, the French boar, with no significant natural predator, needs some kind of human intervention to keep the population under control.

Power transmission systems and machinery guards

Overview

Converting electrical energy to mechanical work is an ongoing process throughout wineries. Electric motors in the winery, internal combustion engines in the vineyard: all have the potential to maim or kill employees, who become entangled in the moving parts.

One preventive strategy is to have a third-party machinery-safety specialist conduct a thorough inventory of all power-driven equipment in the vineyard and winery. This person will be inspecting the equipment for the first time with an unbiased view.

Machinery guards

Machinery guards don't make jobs easier or machinery maintenance tasks faster — just safer. As a general rule, guards should be placed on machinery where a reasonable person would not voluntarily place a hand, while their eyes were closed.

The unreasonable or unwary person needs a slightly higher degree of protection. Thus, when in doubt, install a guard where it will protect the reckless.

However, even vigilant workers can become overly comfortable with dangerous machinery after a period of time. For example, having regularly worked injury-free near an unguarded belt drive, they can easily overlook its danger and become more prone to injury.

Chain drives can be particularly hazardous because the sprockets have teeth and the chain has irregular geometry, which has the propensity to entangle any loose piece of clothing.

Chainsaws, while recognized as one of the most important labor-saving devices developed in the 20th century, also have a reputation for inflicting injury.[1] Unfortunately, the chain cannot be guarded because the bladed chain is the so-called "point of operation" where the woodcutting is actually accomplished.

If the machinery guard inventory is performed in the winery without prior notice to operating staff, discoveries are often made of machinery guards and other safety devices that have been removed during maintenance procedures and not replaced. If an accident did occur under such circumstances, the winery could be charged with negligence for failure to keep operating machinery in a safe condition.

Grinding wheels, running at 2,000 to 3,000 revolutions per minute (rpm), can fly apart, creating deadly missiles. Wheel guards and a full-face shield are both required items of safety equipment for grinders. Portable grinders with abrasive wheels less than two inches in diameter do not require guards,[2] although it is still prudent to wear safety goggles.

In my travels through wine regions in the U.S. and Europe, I have seen, on occasion, deep well turbine pumps for vineyard drip systems driven by direct-drive diesel engines with unguarded drive shafts connecting the motor with a right-angle drive on the pump shaft head. There are two devices that meet both the spirit and letter of the OSHA regulations regarding rotating shaft protection:

- An outer CPVC sleeve which spins with the inner drive shaft, but which can be stopped easily by hand, due to slip rings on each end, or
- An expanded metal fabric cage, which completely encases the moving shaft.

Electronic guards

Presence-sensing devices can be installed on machinery to de-activate the prime mover (motor or engine) when an operator's hand or other body part encroaches on the "sensing field" created by light or electromagnetic sources. The only system that is approved on a blanket basis is a photoelectric light curtain. All other systems must undergo a rigorous OSHA testing and evaluation program to demonstrate that the sensor network operates reliably under all conditions.[3] ■

David Storm is a consulting civil and sanitary engineer specializing in the planning and design of winery utility systems. He is the owner of Winters Winery, Winters, CA, and the author of the reference book Winery Utilities: Planning, Design and Operation. *December 1996. Chapman and Hall, NY, NY.*

References

[1] www.osha-slc.gov/OshStd_toc/OSHA_Std_toc.html

[2] www.osha-slc.gov/Publications/Mach-SafeGuard/

[3] Kratowicz, R., 2000. "'Accidents happen' is no excuse." *Plant Services* Vol. 21, No. 8, pp. 67-70.

IN THE CELLAR

by Jake Lorenzo

Searching for the best

Chuy is in Jake Lorenzo's wine cellar checking out the bottles. He meanders through the Pinot Noirs, tempted by a '96 Casa Carneros and a '90 Beaune. He moves through the Syrahs, passes the small Merlot section, and stops at the Zins. Chuy selects a '93 Guerrilla Vino Zin from the Toovey Vineyard and an '86 Gundlach Bundschu to be decanted for later.

Back in Jake's gleaming new kitchen, Chuy decants the Bundschu. "I love your attitude about wine, Jake. You always have people go in there and pick whatever they want."

Jake Lorenzo flames a pan of foie gras with Espolon Afiejo tequila, waits for the flames to die, then pours the liquid into a waiting pan of spiced apples. "I think it's a sign of hospitality, and usually people pick stuff I forget that I have."

"Don't you worry that people will pick your best wines?"

"Hell, Chuy, how are they going to pick the best wines? How would they know? I mean, they might pick the most expensive wines, or the most famous ones, or even the ones that won the most medals, but the only way we're going to know the quality of the wine is to pull the cork and taste."

Chuy pours some of the Toovey Zin for Jakelyn's mom, then fills Jake's glass and his own. "Umm," says Jakelyn's mom. "I like this. It's unctuous and full of fruit."

"It is delicious," agrees Chuy. "What's the story with this wine, Jake?"

Jake sips from his glass. "It's the last great year from Cathy Toovey's vineyard. By 1994 she had built a second story on her house and a barn behind the vineyard, so I think the vines just couldn't get enough sun and air circulation. We really couldn't get the grapes to ripen further."

"It's spectacular," says Chuy. "How much of this is around?"

Jake smiles, "The vineyard produced six cases. I gave Cathy four. I think we've got four or five bottles left."

"Six cases!" exclaims Chuy. "What happened to the rest of it?"

"That's all there was," explains Jake. "It's not really a vineyard. Back in the 1980s, Tracy (Cathy's husband) took some cuttings from the old Pagani vineyard and planted them in his backyard. Thirty or 40 of the vines took, and we made this wine out of them."

"This could be one of the finest Zins I've ever had," says Chuy. "What if this turns into the best Zin ever made with another year or two of aging? What will you think about having drunk this bottle now?"

Jake laughs, "First of all, I'd think how good it tasted tonight, especially with the foie gras and apples. Then I'd remember how much the three of us enjoyed it. Finally, I'd know that it can't turn into the best Zin ever, because no such thing exists."

"Sure it can," argues Chuy. "There's a best of everything. There's a best kind of car, a best dishwasher, and a best hot sauce. There's got to be a best Zinfandel. Hell, that's the whole point of tastings and wine competitions."

"It's all bogus," insists Jake. "Every person and every thing has different good points that lead to excellence, but there's no such thing as best."

Jakelyn's mom picks up the dishes. "It's awfully early in the night for this kind of discussion. I'll whip up my pasta now." She admonishes Jake, "Be done with this conversation when the food hits the table."

Jake ignores the comment, pours more Zin into their glasses and continues. "There's no such thing as best, Chuy. I've never understood why so many people insist on this kind of ranking. It only makes you unhappy."

"It doesn't make me unhappy, amigo. Chuy Palacios makes the best burritos in California. Hands down. No argument. End of *el cuento*, and that makes me happy."

"It makes a lot of us happy," Jake agrees. "But if you make the best burrito in all of California, how come you drag me over to the Ranch House once or twice a year for one of their shrimp burritos? You seem to enjoy the hell out of those."

"It's simple, Jake. Chuy's Burrito Palace doesn't make shrimp burritos. We make plenty of different burritos, but not shrimp. So when I get a craving, I go to the Ranch House."

"That's my point exactly," says Jake, pounding the table. "There's no single best burrito. There's a myriad of different great burritos that qualify as the best, depending on your individual mood on any given day. You don't make burritos out of turtle meat either, but remember those *caguama* burritos we had in Puerto Escondido."

"Madre de Dios," exclaims Chuy, "those were divine. I'm starting to see your point, Jake. There is not a best wine because one day you might want Pinot Noir and another day you might want Cabernet."

"Right. And one night you might want something young and vibrant, and another time you might want something old and refined. It's one of the great pleasures of Mother Nature, my friend. Mother Nature is all about variety.

"Think about how many different kinds of roses there are. They come in different shapes and sizes, with different colors and aromas. Then they mutate into mixed colors and blends, long-stem and short-stem and wild with almost no stem. You could spend a lifetime studying roses, and never get to see all of them.

"But Mother Nature doesn't stop there. Roses aren't enough. There are daisies and daffodils, violets, gardenias, orchids, and so many other types of flowers that we'd never be able to name them all. Surely, there is no best flower."

"Ah, but Jake," suggests Chuy, "maybe there are so many different flowers because Mother Nature is looking for the best one. She just hasn't found it yet. What about that, amigo?"

"I suppose that could be the case," Jake ponders, "but I don't choose to live in that kind of world. Too many people spend all of their lives aspiring to the best. They want the best car, or the best house, or the best wine. If they can't tell which is the best, then they go for the most expensive, figuring that cost must indicate quality. They spend so much time looking for the best thing that they are miserable worrying about not finding it."

"Well, we don't have to worry about that, Jake. Between us we don't have enough money to buy the most expensive anything. We're lucky that the best things in life are free, right amigo?"

"Absolutely, Chuy, my friend." Jake refills the glasses. "And you know what's nice about there being no best of anything?"

"I can figure it out," says Chuy. "If there's no best thing, then whatever you've got that you're enjoying is a pretty good alternative. You can take pleasure in the moment."

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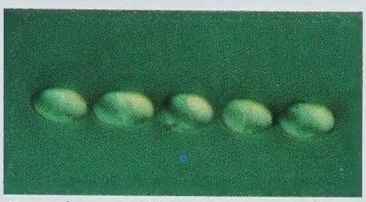

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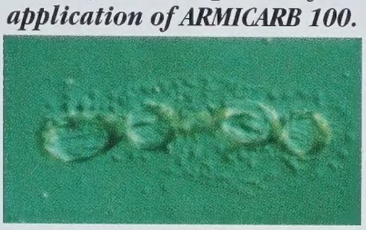

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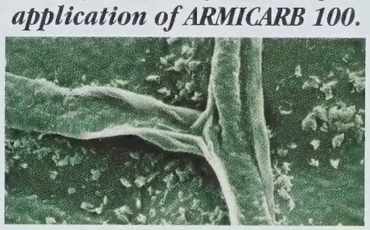

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"Right you are, amigo, and here comes Jakelyn's mom with a truly great pasta."

"And after this, we'll have an incredible old Zin," chimes in Chuy.

"And maybe," inserts Jakelyn's mom, "we could have a really good discussion about what drapes to put in the windows."

"Now there's a discussion that we could have," laughs Jake.

"That could be the best discussion ever," Chuy agrees. ■

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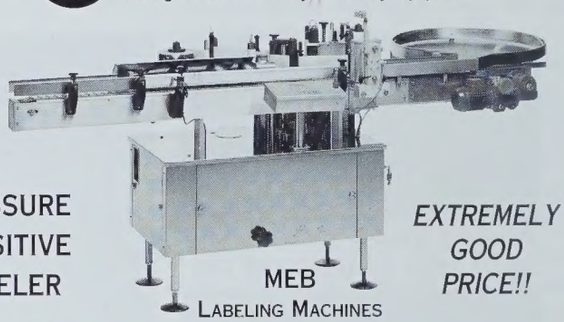

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Enjoy the flexibility of year round planting. Reserve your rootstock now and specify your scion within months of your planting. Order from an outstanding selection of scion varieties and clones.

Duarte Nursery, the best option for you–

Service

Before, during and after planting... Call Markus Bokisch, Stefan Daniels, Dr. Miguel Duarte, Joel Myers, Steve Scheuber or Simon Graves to meet you at your vineyard.

Value

Combine our performance, flexibility and service; plus free delivery, and guaranteed stand. Duarte Nursery offers you the best value.

At Duarte Nursery we measure our success by your success.

Friend's Day
MAY 11TH
9AM - 2PM
Duarte Nursery
Please R.S.V.P.

DUARTE NURSERY INC.

Hughson, California
Phone (209) 531-0351
Fax (209) 531-0352
(800) GRAFTED
www.duartenursery.com

DRY CREEK LABORATORIES
TECHNOLOGY PARTNER

Have you taken a close look at World Cooperage lately?

Modernized hooping equipment applies accurately aligned and better fitting hoops ensuring a tighter barrel

New riveting machinery fastens a stronger, more uniform rivet while providing a traditional dome rivet

New stave planer tooling offers a higher quality finish inside and outside

New branding irons are clear and concise. Introducing laser branding for customized barrel labeling in 2001.

Installation of a planer for furniture-quality finished heads, keeping cellars more attractive

New machinery rounds hoop edges for more comfortable barrel handling

Final inspectors sign each barrel, improving accountability

Redesigned chime, howel and croze secure a tighter seal and eliminate an uneven finish

Simple identification system showcases beautiful oak, not ink

These are only improvements to the barrel's outside. *Let's take a peek inside.*

Our master French cooper has teamed with our engineering and production staff to bring traditional European techniques to our ever-efficient Missouri cooperage. With this partnership we have fine-tuned our coopering process and QC program to better manage sensory creating techniques such as fire bending and toasting. So today you get desired aromas, flavors and textures, barrel after barrel, harvest after harvest.

For a $100 per barrel savings take a closer look and give us a call.

ISC

World Cooperage

A family tradition since 1912.

707.255.5900
888.33.COOPER

On the Internet at
www.cooperage.com